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GENERAL CATALOG 87-88



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**UNIVERSITY
OF CALIFORNIA
SANTA BARBARA**

GENERAL CATALOG

1987-88

GENERAL CATALOG **1987-88**

UCSB (USPS 646-800)

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Calendar, 1987-88

Note: Dates subject to change without notice.

	FALL '87	WINTER '88	SPRING '88
Undergraduate status Open filing period to apply for admission to undergraduate status, to be filed with the University of California, Admissions Application Processing Service, P.O. Box 6600, Albany, CA 94706-0600.	November 1-30, '86	July 1-31, '87	October 1-31, '87
Intercampus transfer Open filing period to apply for intercampus transfer, to be filed with the University of California, Admissions Application Processing Service, P.O. Box 6600, Albany, CA 94706-0600	November 1-30, '86	July 1-31, '87	October 1-31, '87
Returning students Open filing period to apply for readmission, to be filed with the Office of the Registrar by students who have been absent for one or more quarters or who withdrew during their last quarter of attendance at UCSB. Applications will not be accepted after this deadline.	November 1-30, '86	July 1-31, '87	October 1-31, '87
Graduate status Final date for filing applications, application fees, and credentials for admission to graduate status, to be filed with the Graduate Division.	May 1, '87 (Friday)	November 1, '87 (Sunday)	February 1, '88 (Monday)
Registration begins	May '87	October '87	February '88
Quarter begins	September 16, '87 (Wednesday)	January 3, '88 (Sunday)	March 27, '88 (Sunday)
Pre-instructional activities Required testing, advising, meetings, and new student orientation.	September 16-20, '87 (Wednesday through Sunday)	January 3, '88 (Sunday)	March 27, '88 (Sunday)
First day of instruction	September 21, '87 (Monday)	January 4, '88 (Monday)	March 28, '88 (Monday)
Last day of instruction	December 1, '87 (Tuesday)	March 11, '88 (Friday)	June 2, '88 (Thursday)
Final examinations	December 3-9, '87 (Thursday through Wednesday)	March 14-19, '88 (Monday through Saturday)	June 4-10, '88 (Saturday through Friday)
Quarter ends	December 9, '87 (Wednesday)	March 19, '88 (Saturday)	June 10, '88 (Friday)
Commencement			June 11, 12, '88 (Saturday, Sunday)

Summer Session '88

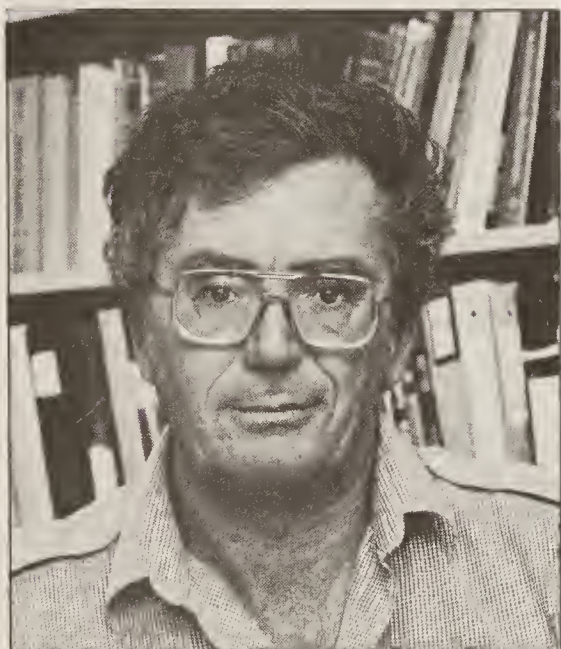
Registration begins	March '88
High School Juniors Program and Young Scholars Program	
Last day to apply	April 22, '88
Programs begin	June 19, '88
First day of instruction	June 20, '88
Last day of instruction	July 29, '88

Holidays

Labor Day	Monday, September 7, '87
Thanksgiving	Thursday and Friday, November 26 & 27, '87 (classes dismissed at 3 p.m., Wednesday, November 25)
Christmas	Thursday and Friday, December 24 & 25, '87
New Year	Thursday, December 31, '87, and Friday, January 1, '88
Martin Luther King, Jr.'s Birthday	Monday, January 18, '88
President's Day	Monday, February 15, '88
Spring Holiday	Monday, March 21, '88
Memorial Day	Monday, May 30, '88
Independence Day	Monday, July 4, '88



The University of California, Santa Barbara



My research and teaching are concerned with the behavior of molecules. I want to know what they will do when they are placed in specific environments, such as metallic or semiconducting surfaces or in a polar solvent, and how they react to finely tuned disturbances such as laser pulses, electron beams, or high electric fields.

We have now entered a new technological era in which we are mass-producing such tools as computers, communication gear, lasers, medical equipment, and drugs that require manufacturing control at a molecular level. To understand molecular chemical physics is now as necessary as understanding electricity or steam was in the past century. I believe that the true culture of our time is the exploration of a wonderful world opened to us by physics, chemistry, biology, and artificial intelligence. I am pleased to be part of a movement that is lasting and of overwhelming importance.

I have been at UCSB for ten years and this is a good place to learn, think, and do new science. Most of my colleagues are clever and exciting people whom I admire and whose criticism and comments are useful and stimulating. This is now a place where the brightest students can learn as much as their intelligence, imagination, and talent allow them.

Metiu Horia

Horia I. Metiu
Professor
Department of Chemistry

The University of California, Santa Barbara is a major research institution offering undergraduate and graduate education in the arts, humanities, sciences and technology, and social sciences. Large enough to have excellent facilities for study, research, and other creative activities, the campus is also small enough to foster close relationships among faculty and students. The total student population is about 17,600, with 15,500 undergraduates and 2,100 graduate students. The faculty numbers more than 900.

A member of the most distinguished system of public higher education in the nation, UC Santa Barbara is committed equally to excellence in scholarship and instruction. Through the General Education program, students acquire good grounding in the skills, perceptions, and methods of a variety of disciplines. In addition, because they study with a research faculty, they not only acquire basic skills and broad knowledge but are exposed to the imagination, inventiveness, and intense concentration that scholars bring to their work. The UCSB faculty includes a Nobel laureate and recipient of the National Medal of Science, members of the National Academy of Sciences and the National Academy of Engineering, numerous Guggenheim fellows, Fulbright scholars, and fellows of the National Endowments for the Arts and for the Humanities.

Students receive encouragement and recognition for scholarly and creative activities through several channels. Many academic departments sponsor

honors programs for undergraduate seniors in which the students design and complete an original research project. Undergraduates may also qualify for election to Phi Beta Kappa and other scholarly societies within their major fields. They may express themselves creatively in music, dance, and drama. They may publish in *Discovery*, the journal of undergraduate research, or in *Spectrum*, the journal of creative writing. Graduate students frequently publish, or co-publish with their mentors, in national journals. In addition, they may publish in *Thresholds*, a journal of graduate research published by the Graduate Students Association.

The University of California, Santa Barbara is fully accredited by the Accrediting Commission for Senior Colleges and Universities, Western Association of Schools and Colleges. Accreditation documents are available for review in the Office of the Vice Chancellor, Cheadle Hall 5105A.

HISTORY

The University of California. The University of California was chartered as a land-grant college in 1868. Nine UC campuses are now situated throughout the state, in Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz. Together, the campuses have a full-time faculty of almost 7,000 and a current enrollment of about 152,000 students, 84 percent of whom are California residents. More than one-fourth of UC students are studying at the graduate and professional level. The university also operates a variety of laboratories, agricultural field stations, extension offices, and other facilities. The university is the primary state-

◀ Dr. Metiu was named UCSB Faculty Research Lecturer in 1987, the highest honor accorded a senior faculty member, and received a Special Creativity Award from the National Science Foundation for 1985-87. He has published more than 140 papers and has lectured widely in the U.S. and abroad on topics in theoretical chemistry

supported academic agency for research.

The nine UC campuses are governed by the Regents of the University of California, a corporate board of 28 members. The regents, in turn, delegate authority to the president, the chancellor of each campus, and to the Academic Senate, which represents the faculty.

The University of California is the preeminent system of public higher education in the country. Its faculty includes 18 winners of Nobel Prizes, Guggenheim fellows, and many members of the American Academy of Arts and Sciences, the National Academy of Sciences, and the National Academy of Engineering.

The University of California, Santa Barbara. The origins of UCSB as an institution of higher learning are in the Anna S.C. Blake Training School, established in 1891, which became the Santa Barbara State Normal School in 1909, and Santa Barbara State College in 1935.

UCSB became a campus of the University of California in 1944 by the transfer of the facilities of Santa Barbara State College to the University of California system. It was designated a general campus of the university in 1958. Graduate study leading to the Master of Arts degree was authorized in 1953; five years later, award of the Doctor of Philosophy degree was approved.

ACADEMIC UNITS OF THE UCSB CAMPUS

College of Creative Studies. The College of Creative Studies at UCSB is unique in the UC system. It enrolls undergraduate students with demonstrated talent for independent work in the arts, mathematics, or in the sciences. Majors are offered in art (painting and sculpture), biology, chemistry, literature, mathematics, music theory and composition, and physics. Work in the college leads to the B.A. degree in all majors, and, optionally, to the B.S. degree in chemistry, mathematics, and physics. In 1986-87, 110 students were enrolled in the college.

College of Engineering. The College of Engineering offers professional undergraduate education in five disciplines: chemical, electrical, mechanical, and nuclear engineering; and computer science. The chemical, electrical, mechanical, and nuclear

engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The computer science program is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. The college currently has a combined undergraduate and graduate enrollment of approximately 2,000 students.

College of Letters and Science. The College of Letters and Science, which enrolls over 14,500 undergraduates, is the largest undergraduate college on the UCSB campus. The college offers nearly 80 majors, including a number of interdisciplinary programs, and awards four degrees: the Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, and Bachelor of Music.

Graduate Division. Through the Graduate Division, UCSB offers advanced programs of study and research leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees in many fields. It also awards the Master of Fine Arts in studio subjects and Master of Education degrees, as well as various credentials and certificates.

Graduate School of Education. The Graduate School of Education trains teachers, administrators, and researchers in education. Two-thirds of the graduate students are working on their Doctor of Philosophy or Master of Arts degrees. Another third enroll in the teaching credential program to qualify for elementary and secondary school teaching. A number of students not only work on advanced degrees but also qualify for advanced specialist or service credentials in administration, bilingual education, reading, school psychology, and special education.



Degrees and Majors Offered

UNDERGRADUATE DEGREES

College of Creative Studies

Art — Painting and Sculpture (B.A.)
Biology (B.A.)
Chemistry (B.A. and B.S.)
Literature (B.A.)
Mathematics (B.A. and B.S.)
Music — Theory and Composition (B.A.)
Physics (B.A. and B.S.)

College of Engineering

Chemical Engineering (B.S.)
Computer Science (B.S.)
Electrical Engineering (B.S.)
Mechanical Engineering (B.S.)
Nuclear Engineering (B.S.)

College of Letters and Science

Departmental Majors

Anthropology, Cultural (B.A.)
Anthropology, Physical (B.A.)
Aquatic Biology (B.A.)
Art History (B.A.)
Art (B.A.)
Biochemistry — Molecular Biology (B.A.)
Biological Sciences (B.A.)
Biopsychology (B.S.)
Black Studies (B.A.)
Botany (B.A.)
with optional concentration in Aquatic Botany
Business Economics (B.A.)
with optional concentration in Accounting
Chemistry (B.A. and B.S.)
Chicano Studies (B.A.)
Chinese (B.A.)
with concentrations in:
Classical Chinese
Mandarin Chinese
Classics (B.A.)
Communication Studies (B.A.)
Dance (B.A. and B.F.A.)
Dramatic Art (B.A.)
with concentrations in:
Directing
Dramatic Literature and Theory
Individual Program
Playwriting
Pre-Credential Program
Theatre for Young Audiences (see also Theatre)

Ecology and Evolution (B.A.)
 Economics (B.A.)
 English (B.A.)
 Environmental Biology (B.A.)
 French (B.A.)
 with optional concentration in
 French Literature and Linguistics
 Geography (B.A.)
 Geological Sciences (B.A.)
 Geophysics (B.S.)
 Germanic Languages and Literatures
 (B.A.)
 with concentrations in:
 German Studies
 Literature
 Greek (B.A.)
 History (B.A.)
 History of Public Policy (B.A.)
 Italian (B.A.)
 Latin (B.A.)
 Linguistics (B.A.)
 with concentration in
 Interdisciplinary Theory
 Mathematical Sciences (B.A.)
 Mathematical Sciences (B.S.)
 with concentrations in:
 Operations Research
 Physical Sciences
 Statistics
 Mathematics (B.A.)
 with concentrations in:
 High School Teaching
 Liberal Arts
 Mathematics (B.S.)
 Microbiology (B.A.)
 with concentrations in:
 Biomedical Sciences
 General Microbiology
 Genetic Engineering
 Music (B.A.)
 Music (B.M.)
 with concentrations in:
 Composition
 Guitar
 Harpsichord/Organ
 Orchestral Instruments
 Piano
 Voice
 Pharmacology (B.A. and B.S.)
 Philosophy (B.A.)
 with concentrations in:
 Analytical Reasoning
 Core Philosophy
 Ethics and Public Policy
 Humanities
 Physics (B.A. and B.S.)
 Physiology and Cell Biology (B.A.)
 Political Science (B.A.)
 with optional emphases in:
 International Relations
 Public Service
 Portuguese (B.A.)
 Psychology (B.A.)
 with optional concentrations in:
 Developmental Psychology
 Human Information Processing
 Personality and Psychopathology
 Religious Studies (B.A.)

Slavic Languages and Literatures
 (B.A.)
 Sociology (B.A.)
 Spanish (B.A.)
 Speech and Hearing Sciences (B.A.)
 Theatre (B.F.A.)
 with emphases in:
 Acting
 Theatrical Design
 and Technology
 Zoology (B.A.)

Interdepartmental Majors

Asian Studies (B.A.)
 Classical Archaeology (B.A.)
 with concentrations in:
 Greek Archaeology
 Roman Archaeology
 Classical Civilization (B.A.)
 Comparative Literature (B.A.)
 Computer Science (B.A.)
 Economics/Mathematics (B.A.)
 Environmental Studies (B.A.)
 Film Studies (B.A.)
 Individual (B.A.)
 Latin American and Iberian Studies
 (B.A.)
 Law and Society (B.A.)
 with optional emphasis in
 Criminal Justice
 Liberal Studies (B.A.)
 (open only to upper-division
 students)
 Medieval Studies (B.A.)
 Renaissance Studies (B.A.)

GRADUATE DEGREES

Graduate Division

Anthropology (M.A. and Ph.D.)
 with emphases in:
 Archaeology
 Ethnology
 Applied Mathematics (M.A.)
 Art History (M.A. and Ph.D.)
 Art Studio (M.F.A.)
 with emphases in:
 Ceramics
 Painting
 Printmaking
 Sculpture
 Asian Studies (M.A.)
 Biochemistry/Molecular Biology (M.A.
 and Ph.D.)
 Biological Sciences (M.A. and Ph.D.)
 with emphases in:
 Aquatic and Population Biology
 Biochemistry-Molecular Biology
 Environmental and Evolutionary
 Biology
 Physiology and Cell Biology
 Botany (M.A.)
 Chemical Engineering (M.S. and
 Ph.D.)
 Chemistry (M.A., M.S., and Ph.D.)
 Classics (M.A. and Ph.D.)
 Communication Studies (M.A.)
 Comparative Literature (M.A. and
 Ph.D.)
 Dramatic Art (M.A. and Ph.D.)
 Economics (M.A. and Ph.D.)
 M.A. with option in
 Business Economics
 Electrical Engineering (M.S. and Ph.D.)
 with emphases in:
 Computer Engineering
 Computer Science
 Microwaves
 Optics and Acoustics
 Solid State
 Signals and Systems
 English (M.A. and Ph.D.)
 French (M.A. and Ph.D.)
 with optional emphasis
 in French Literature
 and Linguistics
 Geography (M.A. and Ph.D.)
 Geology (M.A. and Ph.D.)
 Geophysics (M.S.)
 Germanic Languages and Literatures
 (M.A., Ph.D., and Translator-
 Interpreter Certificate)
 Hispanic Languages and Literatures
 (Ph.D.)
 History (M.A. and Ph.D.)
 with optional concentration in
 Public History
 Latin American and Iberian Studies
 (M.A.)
 Mathematics (M.A. and Ph.D.)
 Materials (M.A. and Ph.D.)
 Mechanical Engineering (M.S. and
 Ph.D.)
 Music (M.A. and Ph.D.)
 M.A. with emphases in:
 Conducting
 Ethnomusicology
 Performance
 M.A. and Ph.D. with emphases in:
 Composition
 History
 Theory
 Nuclear Engineering (M.S.)
 Philosophy (M.A. and Ph.D.)
 Physics (Ph.D.)
 Political Science (M.A. and Ph.D.)
 Portuguese (M.A. and Ph.D.)
 M.A. in Portuguese
 Ph.D. in Hispanic
 Languages and Literatures
 (Portuguese)
 Psychology (M.A. and Ph.D.)
 Religious Studies (M.A. and Ph.D.)
 Sociology (M.A. and Ph.D.)
 Spanish (M.A. and Ph.D.)
 M.A. with emphasis in:
 Language and Culture
 Linguistics
 Spanish Literature
 Ph.D. in Hispanic Languages and
 Literatures
 Spanish and Portuguese (M.A.)
 Speech and Hearing Sciences (M.A.
 and Ph.D.)
 (Ph.D. joint degree with UCSF)

Statistics (M.A.)

Zoology (M.A.)

Graduate School of Education

*Multiple Subject — Elementary
(Teaching Credential)*

*Can include Bilingual emphasis:
Spanish.*

*Single Subject — Secondary
(Teaching Credential)*

Crosscultural Education

(Specialist Credential and M.A.)

*Confluent Education (M.A., M.Ed., and
Ph.D.)*

*Counseling Psychology (Services
Credential, Specialist Certificate,
M.A., and Ph.D.)*

*Services Credential can include
emphases in:*

School Counseling

School Psychology

*Specialist Certificate can include
emphases in:*

*College Student Personnel
Counseling*

*Marriage, Family, and Child
Counseling*

*Early Childhood Education (M.A. and
Ph.D.)*

*Educational Policy and Organizational
Studies (Services Credential, M.A.,
and Ph.D.)*

*Educational Psychology (M.A. and
Ph.D.)*

Instruction (M.A.)

*International Education (M.A. and
Ph.D.)*

*Language Development and Reading
(Specialist Credential, M.A., and
Ph.D.)*

Can include Bilingual emphasis.

*Special Education (Specialist
Credential, M.A., M.Ed., and Ph.D.)*

*Specialist Credential includes
specializations in:*

Learning Handicapped

Severely Handicapped

THE UNIVERSITY LIBRARY

The UCSB library is a major research facility. As a member of the Association of Research Libraries, the Center for Research Libraries, and the Research Libraries Group, it participates in cooperative programs and policy development with other major research libraries to provide collections and services for the UCSB community.

The library has about 1.75 million books and bound journals. The collection grows by about 60,000 volumes annually. In addition, the library has an excellent collection of maps, technical reports, satellite imagery, government documents,



Reference librarian Diane Johnson shows freshman Greg Steele how to find a book using MELVYL, the university-wide computerized card catalog.

manuscripts, and microformat materials.

The UCSB library collection is housed in two buildings: the Main Library and the Arts Library. The main building houses the general collection as well as several specialized units and services, which offer materials on specific subject areas or in specialized formats. Examples include the Science and Engineering Library (which provides more than 5,000 current serial subscriptions, 300,000 volumes, and 550,000 technical reports), the Government Publications Department, the Map and Imagery Laboratory, the Curriculum Laboratory, the Black Studies Unit, and the Coleccion Tloque Nahuac (Chicano Studies Unit). Also located in the Main Library is the Department of Special Collections, which houses rare books and manuscripts as well as several distinguished collections, including the Wyles Collection on the American West, the Skofield Printers' Collection, and other in-depth research collections. In addition, the Main Library also houses the Thoreau Edition, a long-term editing project

which, with the support of the University Library, is producing an authoritative multi-volume edition of the writings of Henry David Thoreau.

Some of the special services in the Main Library include: computerized access to recent additions to the catalogs of all UC libraries; computerized access to citations in bibliographic data bases of recent science and engineering literature; terminals connected to the main computer center; and a Kurzweil Reading Machine for the blind, jointly owned and operated with the Special Services Program.

The Arts Library is a full-service branch library that supports academic programs in art and music. In addition to the substantial book and journal collections, special materials include more than 26,000 phonograph records and a collection of music scores.

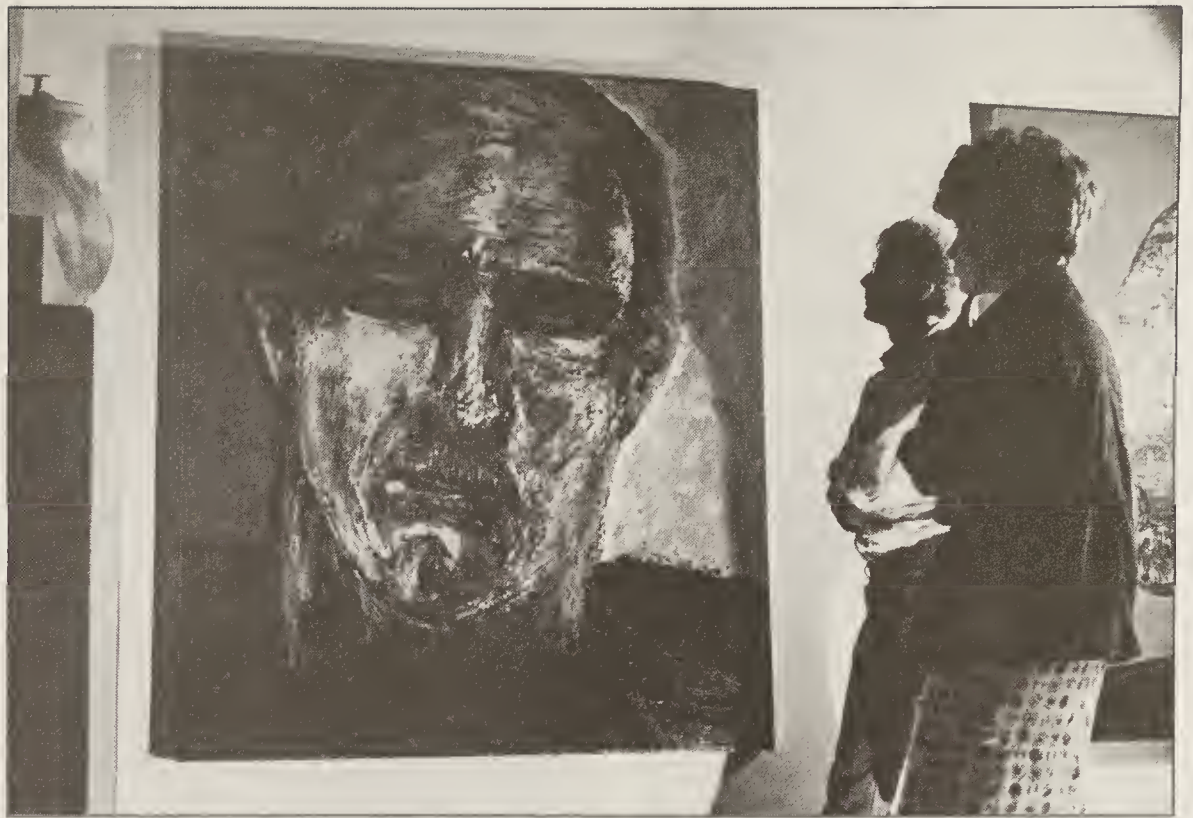
UNIVERSITY ART MUSEUM

The University Art Museum presents many exhibitions during the year, balanced between historical and

contemporary artists, and often coordinated with the departments of art history and art studio. Each spring, the museum showcases the work of students in the Department of Art Studio. Courses in museum practices are offered through the Department of Art History.

The permanent collections include several thousand art objects, ranging in origin from ancient to contemporary, and from exotic to local. The Sedgwick Collection of fifteenth-, sixteenth-, and seventeenth-century European paintings, and the Morgenroth Collection of Renaissance medals and plaquettes are on permanent exhibition. The Ala Story Print Collection and the Southern California Architectural Drawing Collection are available for study by appointment.

The University Art Museum was accredited by the American Association of Museums in 1973.



Mounting 19 exhibitions a year, the University Art Museum provides new sights every five to six weeks. Here visitors appreciate a powerful painting by Michael Dvorcsak during the Art Studio faculty exhibition.

INFORMATION SYSTEMS AND COMPUTING

Information Systems and Computing (IS&C) is comprised of three departments: the Computer Center, the Information Systems Office, and Communications Services. IS&C is the primary user contact for systems analysis, computer programming, and consulting for administrative, academic, research, and student users of central computing systems. Access to the university's data and telecommunications networks is also provided by IS&C. The central facilities support several computing systems, including MVS, MVT, VM/CMS, and UNIX. Public terminals are available in Phelps Hall and the Library for use by members of the campus community. There are more than 1,800 private and departmental terminals on campus. Micro- and minicomputer systems for teaching and research are utilized in several laboratories and departments. Information is available from the IS&C Administrative Office in Girvetz Hall 2326. Telephone: 961-2261.

INSTRUCTIONAL DEVELOPMENT

UCSB devotes time, resources, and staff to assure that teaching is vital and renewed. Instructional Development helps faculty and teaching assistants through course evaluations, visual aids production, funding of major course revisions, and

provision of special equipment, and through learning and language laboratories in Kerr Learning Resources Hall. Instructional Development staff videotape lectures and laboratory sessions and help new teachers evaluate their teaching. The Teaching Assistant Training Program is geared especially for new teaching assistants.

ARTS & LECTURES

The Arts & Lectures Program serves the university and the community by presenting more than 300 public events each year. These events extend and supplement the intellectual life of the classroom and provide unique and varied cultural programming.

Each year, more than 30 professional artists and ensembles perform in Campbell Hall, and often in other class, workshop, or demonstration settings on campus and in the community. Dance, music, and theatre events range from classic to avant-garde to popular.

As many as 90 public lectures each year present speakers and subjects of enormous diversity, covering topics from the literary and historical to current headlines. Of broad general interest, the lectures are often co-sponsored with other organizations and programs.

Each quarter, new film series and various film specials are presented.

The series cover a wide range of style and content and often complement academic courses. The music and dramatic art departments also offer extensive and varied performances in classical and jazz music, classic and contemporary theatre, and dance. Arts & Lectures is located in Building 402. Telephone: 961-3535.

THE CAMPUS SETTING

The UCSB campus is situated on an 815-acre promontory on the Pacific seashore. The main campus is bordered on two sides by the ocean and on the third by the community of Isla Vista. On the fourth side, the campus faces the Santa Ynez mountain range across Goleta Valley. The main campus contains most of the 72 permanent buildings that house the university. The outlying Storke campus includes playing fields and a family student housing complex. The west campus, which is largely undeveloped, contains an ecologically significant expanse of dunes that has been set aside as a natural preserve. Adjacent to the campus is the Santa Barbara Municipal Airport, with connecting service to and from Los Angeles, San Francisco, and other major cities. Four-lane Highway 101 passes less than a mile from UCSB, with clearly marked turn-offs leading to the campus. Santa Barbara also may be reached by Amtrak and by regular bus service, with connections to the campus.

On campus and between the campus and nearby residential areas, the principal means of transportation is the bicycle. An extensive system of bike paths and three bicycle underpasses separate cyclists from pedestrians and motorists. Buses operate between the campus and surrounding communities. The campus is situated on a plateau, making it easy for students with mobility impairments to navigate. The Special Services Program provides mobility assistance on campus for those with disabilities. In addition, Easy Lift buses operated by the community provide transportation to disabled students.

Recreational facilities include tennis courts, more than a mile of swimming and surfing beach, jogging paths, a 50-meter by 25-yard swimming pool accessible to the handicapped, extensive playing fields, a synthetic track, baseball and softball diamonds, two gymnasiums, and a 17,000-seat stadium. The climate is ideal year-round for outdoor activities.

THE COMMUNITY

UCSB is situated in the unincorporated community of Goleta, about 10 miles from downtown Santa Barbara. Southern Santa Barbara County has a population of about 182,000.

Adjacent to the university, the community of Isla Vista is made up of 11,500 residents, at least half of them UCSB students. Isla Vista is bounded on three sides by the university and on the fourth by the ocean. Less than one square mile in area, Isla Vista is nonetheless a self-contained community with shops and services, restaurants, and recreational areas.

The city of Santa Barbara offers a diversity of natural and cultural attractions. Notable among these are the Museum of Art, the Historical Society Museum, the Museum of Natural History, and the Botanic Garden. UCSB classes sometimes are held at the Museum of Natural History, and programs frequently are arranged at the Museum of Art. The Botanic Garden is available to classes and advanced students in botany, and a research laboratory has been established there for independent investigation by students and faculty.



Students in the Study and Field Experience Program in Mexico City explore the pyramids in nearby Teotihuacan. Seventy campuses in 29 countries are open to UC students through the Education Abroad Program, which is headquartered at UCSB. Students can apply for full-year or shorter-term study sojourns.

ADDITIONAL ACADEMIC PROGRAMS

Education Abroad Program

The University of California offers an overseas study program in cooperation with more than 70 host universities and colleges in 29 countries throughout the world. More than 1,000 UC students, primarily undergraduates, will take part in this program in 1987-88. Participating students remain registered on their home campuses while they study abroad and receive full academic credit for their work. More than 300 international students attend the University of California under the auspices of the Education Abroad Program (EAP), with scholarships provided through UC and their home institutions.

Full-year study programs are available in Australia, Austria, Brazil, China, Costa Rica, Egypt, France, Germany, Hong Kong, Hungary, India, Ireland, Israel, Italy, Japan, Kenya, Korea,

Mexico, New Zealand, Norway, Peru, Portugal, Sierra Leone, Spain, Sweden, Taiwan, the United Kingdom, and the U.S.S.R. One-term language programs are also available in China, Mexico, and the U.S.S.R. Study and Field Experience (SFE) programs are offered in Mexico and Togo. Spring-quarter tropical biology and medical programs are offered in Costa Rica.

Normally, for full-year programs, sophomores apply for admission to EAP for their junior year; a limited number of students are accepted each year as seniors and as graduate students. Students must complete one year of standard Chinese for the term in China and three years of Russian for the U.S.S.R. language semester. To be eligible for the SFE programs and the Mexico language quarter, students need to have completed only two terms of work at UC. Students must meet certain biology and Spanish language requirements for the tropical biology quarter. To be eligible for the medical quarter, students must be in their fourth year of

medical school and have completed two years of Spanish language study.

University of California professors serve as directors and associate directors of most study centers. Full credit from the University of California is granted for courses satisfactorily completed, and approved courses are recorded on official UC transcripts. With careful planning, most EAP students make normal progress toward their UC degrees; however, acceptance of credits earned abroad toward major or graduation requirements depends upon UC departmental and campus criteria.

Selection of UC undergraduates is subject to the following minimum qualifications: 3.0 cumulative grade-point average at the time of application; junior standing by the end of the spring term (not required for the SFE programs); support of the UCSB EAP Selection Committee; and completion of language courses as required, with an overall grade-point average of 3.0 by the end of the spring term.

The cost of studying abroad through EAP is comparable to the cost of studying at UCSB. As on the UCSB campus, EAP participants are responsible for UC registration and educational fees, campus fees, and room and board, books, and personal expenses. The only additional costs directly related to the program are for round-trip transportation and vacation, travel, and personal expenses beyond what normally would be spent at home. No overseas or administrative fees are charged. Most University of California financial aid, including grants, scholarships, and loans, is available to EAP students. In addition, special scholarships are available for minority and economically disadvantaged students and for students going to countries in the Pacific Region.

The EAP office is located in Girvetz Hall 1231. An adviser there can provide full details about the program, including application procedures, deadlines, academic programs, cost, financial aid, travel, and housing arrangements. In addition, descriptive brochures, academic catalogs, and listings of EAP courses previously taken by UC students are available. The UC systemwide offices of EAP also are located at UCSB.

The EAP host universities are as follows:

Australia

Australian National University, Canberra
La Trobe University, Melbourne
Macquarie University, Sydney
Monash University, Melbourne
University of Melbourne
University of New South Wales, Sydney
University of Sydney

Austria

University of Vienna

Brazil

University of São Paulo

China

Peking University
Nanjing University

Costa Rica

University of Costa Rica
Monteverde Institute

Egypt

American University in Cairo

England

University of Birmingham
University of East Anglia, Norwich
University of Exeter
University of Hull
University of Kent at Canterbury
University of Lancaster
University of Leeds
University of London, University College
University of Sussex
University of York

France

Paul Valéry University, Montpellier
University of Aix-Marseille III
University of Bordeaux III
University of Grenoble II
University of Lyon II
University of Paris III
University of Pau
University of Poitiers

Germany

Georg-August University of Göttingen

Hong Kong

The Chinese University of Hong Kong

Hungary

Karl Marx University of Economics, Budapest

India

University of Delhi

Ireland

University of Dublin, Trinity College

Israel

The Hebrew University of Jerusalem
University of Haifa

Italy

The Bisonte International School of Graphic Arts, Florence
The G.B. Martini Conservatory of Music, Bologna
The Giorgio Cini Foundation, Venice
University of Padua
University of Venice
Venice Academy of Fine Arts

Japan

International Christian University, Tokyo
Sophia University, Tokyo
Tokyo Institute of Technology
The University Center for Japanese Language, Tokyo

Kenya

University of Nairobi

Korea

Yonsei University, Seoul

Mexico

National Autonomous University of Mexico, Mexico City

New Zealand

Lincoln College, Christchurch
Massey University, Palmerston North
University of Auckland, Christchurch
University of Canterbury, Christchurch
University of Otago, Dunedin

Norway

University of Bergen

Peru

Catholic University, Lima

Portugal

University of Lisbon

Scotland

University of St. Andrews
University of Stirling

Sierra Leone

Fourah Bay College, Freetown

Spain

University of Barcelona
University of Madrid

Sweden

University of Lund

Taiwan

National Chengchi University, Taipei

Togo

University of Bénin, Lomé

U.S.S.R.

Leningrad State University

Wales

St. David's University College, Lampeter
University College of Wales, Aberystwyth

Summer Sessions

A regular six-week summer session is offered each year at UCSB. This Summer Sessions program includes regular lower- and upper-division courses, special study undergraduate courses, some graduate courses, and standard teaching credential courses. In addition, undergraduate-level institutes in film studies and Portuguese are offered each year.

Summer Sessions also includes the Institutes in French and German Languages and Culture. These special six-week graduate-level institutes, offered year to year on a continuing basis, offer qualified students the opportunity to earn a master's degree in three summers.

Qualified high school students who have completed their junior year may apply to the Summer Program for High School Juniors, and gifted students who have completed eighth grade may apply to the Young Scholars Summer Program. Both of these special programs run during the regular summer session. Students can receive full university credit for courses completed satisfactorily in these programs.

The *Summer Sessions Bulletin*, published each spring, contains a full list of the regular summer session courses and full information regarding Summer Sessions fees, rules, and regulations. The *Bulletin* and application forms for regular summer session and special institutes and programs are available from the UCSB Summer Sessions office, Cheadle Hall 1317. Telephone: 961-2047.

University Extension

University Extension, the continuing education division of UCSB, offers courses, workshops, and seminars for professional development, personal growth, and life enrichment year-round in Santa Barbara, Ventura, San Luis Obispo, and Kern counties. Sequential programs, leading to a certificate or professional designation, are available in many fields, including management, administration, counseling, alcohol/drug studies, commercial design, interior design, light construction, financial planning, supervisory skills, and customer service. University Extension also offers courses in photography, writing, business, health science, psychology, and personal development. A non-profit organization, Extension is

supported by student fees and receives no state funds.

University Extension gives a ten-week intensive English course each quarter to develop and improve the English language skills of foreign students and professionals. Intensive conversation courses are also offered to help participants improve their English language skills.

Members of the community may enroll in campus classes through University Extension by concurrent enrollment. Admission is by written consent of the instructor, and only after all regularly enrolled students have been accommodated. Fees are based on the number of units taken. Credit earned may be used by matriculated students, upon petition, to satisfy undergraduate degree requirements at UCSB, but grades are not included in the UC grade-point average. Concurrent enrollment does not constitute admission to the University of California.

Additional information about all UC Extension programs, including English language programs and concurrent enrollment, is available from the UCSB University Extension office. Telephone: 961-4200.

Off-Campus Studies

The university has two sites in Ventura County where off-campus students who qualify for regular university admission may participate in a limited number of degree programs. A Master of Science degree and a certificate in electrical and computer engineering are offered at the Point Mugu Naval Test Center. Courses leading to baccalaureate degrees in such fields as anthropology, English, liberal studies, political science, psychology, sociology, business economics, and history are offered at the University Center in Ventura. Assistance with admission and enrollment procedures, as well as academic counseling, are provided at the off-campus locations. Further information is available from the Off-Campus Studies office, Cheadle Hall 1317, telephone: 961-3877; or from the University Center in Ventura, 3585 Maple St., Suite 112, Ventura, CA 93003. Telephone: (805) 644-7261.

ORGANIZED RESEARCH UNITS

Ten Organized Research Units (ORUs) provide unusual opportunities

for students and faculty to do basic and applied research in a variety of disciplines. The following ORUs operate outside of the established academic teaching departments at UCSB:

- Center for Chicano Studies
- Community and Organization Research Institute
- Computer Systems Laboratory
- Institute for the Interdisciplinary Applications of Algebra and Combinatorics
- Institute of Environmental Stress
- Intercampus Institute for Research at Particle Accelerators
- Marine Science Institute
- Quantum Institute
- Social Process Research Institute
- Institute for Polymers and Organic Solids

The **Center for Chicano Studies** develops and supports research on the history and contemporary condition of Mexican descent population in the United States. It is currently involved in developing research on Chicano/Mexican farm workers in the Tri-County area and research that will impact public policy affecting Hispanics in the United States. The center also organizes, promotes, and sponsors a wide variety of academic and public events in order to help advance an understanding and appreciation of Chicano/Mexican society and culture. In a collaborative effort with academic departments and faculty, the center provides training opportunities while seeking to further the advancement of Chicano scholarship by integrating graduate and undergraduate students into its research endeavors. The center has established two major programs: one with a focus on the social sciences and the other focusing on the humanities.

The **Community and Organization Research Institute** conducts interdisciplinary basic and policy research on a wide spectrum of problems. The most promising of new areas to investigate has been cognitive science, a subject area that involves psychologists, computer scientists, linguists, and a number of other disciplines. Beneficiaries of that research range from the blind who need help in learning to cope in a new environment to designers of robots that need to be able to navigate in space. How health data are acquired and used in research is another major focus of CORI researchers. Energy



A team of students and researchers aboard the Thomas G. Thompson retrieves a suction sampler or "slurp gun" just disconnected from the WASP, a one-person submarine used in marine research. Designed by UCSB marine scientist Dr. Bruce Robison, the slurp gun is used to collect fast-moving sea animals such as squid.

supply and regulation continues to be a topic involving CORI clients as do the study of criminal behavior and its control. An area of research just getting underway is that relating questions in corporate finance to the operation of national economic systems.

Research in the **Computer Systems Laboratory** is concentrated in the areas of Remote Sensing and Environmental Optics, which depend on computers and digital image processing technology. Current projects involve marine bio-optics and photoecology, optical variability and bioluminescence in the sea, electromagnetic and chemical properties of snow, and hydrologic and surface climate modeling. The laboratory also develops software systems for machine processing of remotely sensed data from satellites and aircraft.

The **Algebra Institute** sponsors colloquia, research conferences, and seminars, and houses the editorial offices of the international research journal, *Linear and Multilinear Algebra*. The special focus of the Algebra Institute is the interaction between applied algebra and discrete mathematics and other disciplines

such as the biological sciences, economics, physics, and sociology.

The research emphasis of the **Institute of Environmental Stress** is primarily aimed at an understanding of the adaptive potential of organisms. Areas of research involve not only external environmental stresses, but also the aging process, exercise, biomedical engineering, and neuroscience.

The **Intercampus Institute for Research at Particle Accelerators** assists the high-energy experimental physics groups at the Santa Barbara, San Diego, and Davis campuses of the University of California in their research on elementary particles carried out at the Stanford Linear Accelerator Center.

The **Marine Science Institute** administers and supports research projects for faculty and graduate students from 12 disciplines. Much of the research focuses on the resources of the California coast, although the diverse backgrounds and interests of the principal investigators involve research activities dispersed throughout the world.

The **Quantum Institute** is a problem-oriented research unit studying the interaction of electromagnetic

radiation with matter. Current research includes work on surface science, combustion, earth strain, chemical lasers, free electron lasers, and on molecular, solid state, and surface spectroscopy.

The **Social Process Research Institute** participates in several areas of policy-related and basic research, especially in the social sciences. Topics include: domestic violence, capital punishment, the sociological impact of AIDS, the developmentally disabled, international archaeology, literacy, immigration, and evaluation research.

The **Institute for Polymers and Organic Solids** draws together scientific expertise in physics and chemistry to do fundamental research on a new class of materials: organic compounds capable of conducting electricity.

Neither courses of instruction nor degree programs are offered through the Organized Research Units. Additional information about the units is available from the Office of Research, Development, and Administration, Cheadle Hall 3227. Telephone: 961-4188.

AFFILIATED UNITS

Center for Black Studies. The Center for Black Studies conducts research on the social, historical, political, and economic forces that have affected African people throughout the world. The center sponsors a faculty development program (dissertation fellows); organizes and presents seminars, lectures, and symposia; and serves as a liaison between the campus and the Santa Barbara community.

Engineering Research Centers. See College of Engineering, page 51.

Robert Maynard Hutchins Center for the Study of Democratic Institutions. Established in 1959 and associated with UCSB since 1979, the Center for the Study of Democratic Institutions is devoted to clarifying, through interdisciplinary dialogue, the basic issues facing democratic societies. Through the years, the Center has worked to contribute to public understanding of democratic principles by reexamining them in light of current political, economic, social, and technological conditions. Activities include dialogues on public policy issues, research projects, conferences, and

publications, and participants represent both academic and nonacademic professions. The Center's chief publication, *The Center Magazine*, is sent to more than 15,000 members and nearly 3,000 university, college, and public libraries. The Center, a public, nonprofit, educational operation, is located in Building 446. Telephone: 961-2611.

Institute for Theoretical Physics.

The National Science Foundation's Institute for Theoretical Physics, initiated in 1979 on the UCSB campus, brings together physicists from all over the world to collaborate on problem areas that cut across subfield lines. Current areas of study include exotic particles and

processes, the physics of disorder, formation of structure in the universe and quantum noise in macroscopic systems. Approximately 45 researchers are in residence at the institute at any given time. One of the major centers of theoretical physics in the world, the institute is housed in Ellison Hall. Telephone: 961-4111.

NATURAL RESERVE SYSTEM

The University of California administers 26 natural reserves throughout the state. The reserves are undisturbed natural areas representative of the ecological diversity of California. The UCSB campus has responsibility for four of

the areas: the Carpinteria Salt Marsh Reserve, the Coal Oil Point Reserve, the Santa Cruz Island Reserve, and the Valentine Eastern Sierra Reserve, which consists of the Sierra Nevada Aquatic Research Laboratory (SNARL) and Valentine Camp. Available to students and faculty for teaching and research, the reserves provide outdoor laboratories and classrooms for field-oriented natural sciences. The four reserves are administered by the Marine Science Institute; inquiries about their use and scheduling may be directed to the Natural Reserve System office. Telephone: 961-4127.



Undergraduate Education at UCSB



Before attending UCSB I had approached my education through apprenticeship to creative individuals in the humanities and sciences. After such a one-to-one framework of learning, I had some concerns about the depth of education available at a large public university like UCSB. But images of a "mass-produced" education vanished quickly as I found an enormous network of personalized knowledge at my disposal in the UCSB curriculum. UCSB's emphasis among its faculty on both research and teaching allows undergraduates to be exposed to hands-on experience and to explore issues of interest directly and in depth.

I remember walking into my physiology professor's laboratory and saying, "I want to do research." Before I knew it I had my own research project and was able to receive a grant from UCSB to support it. The College of Letters and Sciences honors program also provides undergraduates the opportunity to arrange with professors individualized "study contracts" that allow learning to expand beyond the classroom.

I entered UCSB as a physiology major with the goal of preparing myself for a medical school education and career as a physician. After taking a course that introduced me to medical anthropology, I switched to a Liberal Studies major. The Liberal Studies program allowed me to create my own curriculum geared to studying disease and health from a broad cross-cultural perspective through a joint emphasis on biology, anthropology, and psychology. As I enter Stanford University Medical School this fall, I will know that UCSB strengthened and expanded my ability to learn.

Kris Kealey

Kris Kealey
Undergraduate, Class of 1987
Liberal Studies major

The Office of Admissions and Relations with Schools provides prospective students with information about academic majors and helps them plan their programs of study. The office also gives tours of the campus (call 805-961-8175 for information). Informational material describing UCSB is available in the office or by mail. Those interested may visit or write the Office of Admissions and Relations with Schools in Cheadle Hall 1234, University of California, Santa Barbara, CA 93106. Telephone: (805) 961-2485.

The University of California, Santa Barbara has taken positive steps to increase the representation of ethnic minorities, disadvantaged and handicapped persons, and older individuals in its academic programs. The university does not discriminate on the basis of race, color, national origin, religion, sex, age, sexual orientation, or handicap in admission to or participation in its programs, activities, or services.

APPLYING FOR ADMISSION TO UCSB

The first step in applying for admission to UCSB is to obtain and complete an Undergraduate Admission Application. Application packets may be obtained from California high school or community college counselors or from any University of California admissions office. Students applying to fall 1988 and later quarters should mail the completed application and the appropriate nonrefundable \$35 application fee to University of California, Admissions Application Processing Service, P.O. 23460, Oakland, CA 94623-0460; a self-addressed envelope is included in the application packet.

When to apply for admission. To make sure that they will be considered for admission to their preferred major, students should file their completed application forms during the appropriate priority filing period.

Quarter	Priority Filing Periods
Fall 1988	November 1-30, 1987
Winter 1989	July 1-31, 1988
Spring 1989	October 1-31, 1988

During the priority period, UCSB accepts for consideration all applications received. However, the campus may not be able to accommodate all who apply. Also, students must file during the priority period if they plan to apply for financial aid, on-campus housing, or other special programs for which early application is important. Some oversubscribed majors may not accept applications for admission to the winter or spring quarters.

Entrance requirements. The university's undergraduate admission requirements are based on two principles: that the best predictor of success in the university is high scholarship in previous work, and that the study of certain subjects in high school provides good preparation for university work.

ADMISSION OF FRESHMEN — CALIFORNIA RESIDENTS

Students who have not enrolled in a college-level institution since graduation from high school are considered freshman applicants. Enrollment in college summer session immediately after high school graduation does not affect the status of freshman applicants.

There are three primary requirements for consideration for admission as a

freshman: subject, grade, and examination.

Subject Requirement

To satisfy the subject requirement, prospective UCSB students must have successfully completed a specific sequence of high school courses in designated subjects, unless they are admitted based on test scores alone. (See "Admission by Examination Alone.")

The courses required for admission are known as the A-F requirements. Courses completed in California high schools will satisfy the subject requirement only if they appear on a certified course list submitted by the applicant's high school principal to the university-wide administration office. Students are advised to make sure that the courses they are taking to fulfill the subject requirement are on the list submitted by their principal.

The A-F requirements are:

A — History: 1 year

One year of United States history or one-half year of U.S. history and one-half year of civics or American government.

B — English: 4 years

Four years of college-preparatory English composition and/or literature. No more than one one-year course will be accepted from the ninth grade.

C — Mathematics: 3 years

Three years of mathematics: elementary algebra, geometry, and intermediate algebra.

D — Laboratory Science: 1 year

A one-year course in one laboratory science, taken in tenth, eleventh, or twelfth grade.

E — Foreign Language: 2 years

Two years of one foreign language.

F — College-Preparatory Elective Courses: 4 years

Four years required. These courses are to be chosen from at least two of the following areas: history, English, advanced mathematics, laboratory science, foreign language (a third year in the foreign language used for the 'E' requirement above, or two years of another foreign language), social science, and visual and performing arts.

It will take 15 units of high school work to fulfill the Subject Requirement. At least seven of the 15 units must have been earned in courses taken during the last two years of high school.

The A-F courses are the minimum subject requirements for admission to UCSB. Students are advised to take additional courses, especially in mathematics, English, and laboratory science, to strengthen their preparation for university work. Additional preparatory subjects are recommended for various majors at UCSB. To learn more about these recommendations, applicants may see their school counselor or contact UCSB's Office of Relations with Schools, Cheadle Hall 1234. Telephone: 961-2485.

Grade Requirement

The courses listed above are the only ones used to compute the grade-point average. Grades for courses taken in the ninth grade or earlier are not computed in the grade-point average, although subject requirements (except for laboratory science) will be satisfied by a C grade or better in such courses.

Students with grade-point averages of 3.30 or better in the subjects listed in the A-F requirements will be UC-eligible regardless of their score on one of the required standardized aptitude examinations. Students with grade-point averages below 3.30 but above 2.77 will be UC-eligible if they achieve the specified score on one of the required standardized aptitude examinations. (See the table "University of California Eligibility Index.")

Honors courses. Grades earned in as many as four units that are certified by the high school as honors level and

taken in the last two years of high school will be given extra weight in computing the grade-point average: A=5 points, B=4 points, C=3 points. Only courses in U.S. history, English, advanced mathematics, laboratory science, foreign language, social science, and arts can be weighted in this way.

D or F grades. Any A-F subject in which a student received a grade of D or F may be repeated once for a higher grade. In addition, in the foreign language, laboratory science, and mathematics sequences, a grade of C or higher in a more advanced course validates a previous D or F grade. In this case, however, the original grade is included in the computation of the grade-point average.

Examination Requirement

All applicants must submit the test scores described below. Students applying for fall quarter should take these tests in their junior year of high school, or early in their senior year. Students should apply for admission promptly after the priority filing period opens, even if they have not yet taken the tests.

The required examinations are as follows:

1. One aptitude test, either:
 - a) The Scholastic Aptitude Test (SAT) — the verbal and mathematics scores from this test must be from the same sitting; or,



b) The American College Test (ACT).

2. Three College Entrance Examination Board Achievement Tests, which must include testing in:

- a) English composition,
- b) Mathematics (level 1 or 2), and
- c) Social studies, foreign languages, literature, or science.

Test dates and further information can be obtained from high school counselors or from the College Entrance Examination Board, 1947 Center Street, Berkeley, CA 94704 (for both the SAT and the CEEB Achievement Tests), or the American College Testing Program, Registration Unit, P.O. Box 168, Iowa City, IA 52240 (for the ACT).

Admission by Examination Alone

Applicants who do not meet the admission requirements discussed earlier, and who have completed fewer than 12 transferable college units since high school graduation, may be considered for admission by examination alone. To qualify, they must score a minimum total of 1100 on the Scholastic Aptitude Test (SAT) or 26 on the American College Test (ACT). In addition, they must achieve a total score of 1650 or higher on the three College Entrance Examination Board Achievement Tests, with a minimum of 500 on each test.

ADMISSION TO ADVANCED STANDING — CALIFORNIA RESIDENTS

Students have advanced standing if they have registered at another college or university, including another UC campus, or in college-level extension classes (other than a summer session immediately following high school graduation). Students cannot ignore their college record and apply for admission as freshman applicants.

Requirements for admission to advanced standing vary, depending on the high school record.

1. Students who were eligible for admission from high school will be eligible as advanced-standing applicants if their cumulative grade-point average at all colleges attended is at least 2.0, and they are in good

University of California Eligibility Index <i>(California residents only)</i>		
A-F G.P.A.	ACT Composite	SAT Total
2.78	35	1600
2.79	35	1580
2.80	34	1550
2.81	34	1530
2.82	33	1510
2.83	33	1480
2.84	33	1460
2.85	32	1440
2.86	32	1410
2.87	32	1390
2.88	31	1370
2.89	31	1340
2.90	30	1320
2.91	30	1300
2.92	29	1270
2.93	29	1250
2.94	28	1230
2.95	28	1200
2.96	27	1180
2.97	27	1160
2.98	26	1130
2.99	26	1110
3.00	25	1090
3.01	25	1060
3.02	24	1040
3.03	24	1020
3.04	23	990
3.05	22	970
3.06	21	950
3.07	21	920
3.08	20	900
3.09	19	880
3.10	18	850
3.11	18	830
3.12	17	810
3.13	16	780
3.14	15	760
3.15	14	740
3.16	14	710
3.17	13	690
3.18	12	670
3.19	11	640
3.20	10	620
3.21	9	600
3.22	9	570
3.23	8	550
3.24	8	530
3.25	7	500
3.26	7	480
3.27	6	460
3.28	6	430
3.29	5	410
3.30	5	400

academic standing at the last college attended.

2. Students who were not eligible for admission as freshmen because they lacked one or more of the required high school subjects may be admitted if they:

- a) establish an overall grade-point average of 2.0 or better in all transferable courses; and
- b) complete, with a grade of C or better, appropriate college courses in the missing high school subjects.

Students who choose not to make up all subject omissions can become eligible for advanced-standing admission by meeting condition (3) below.

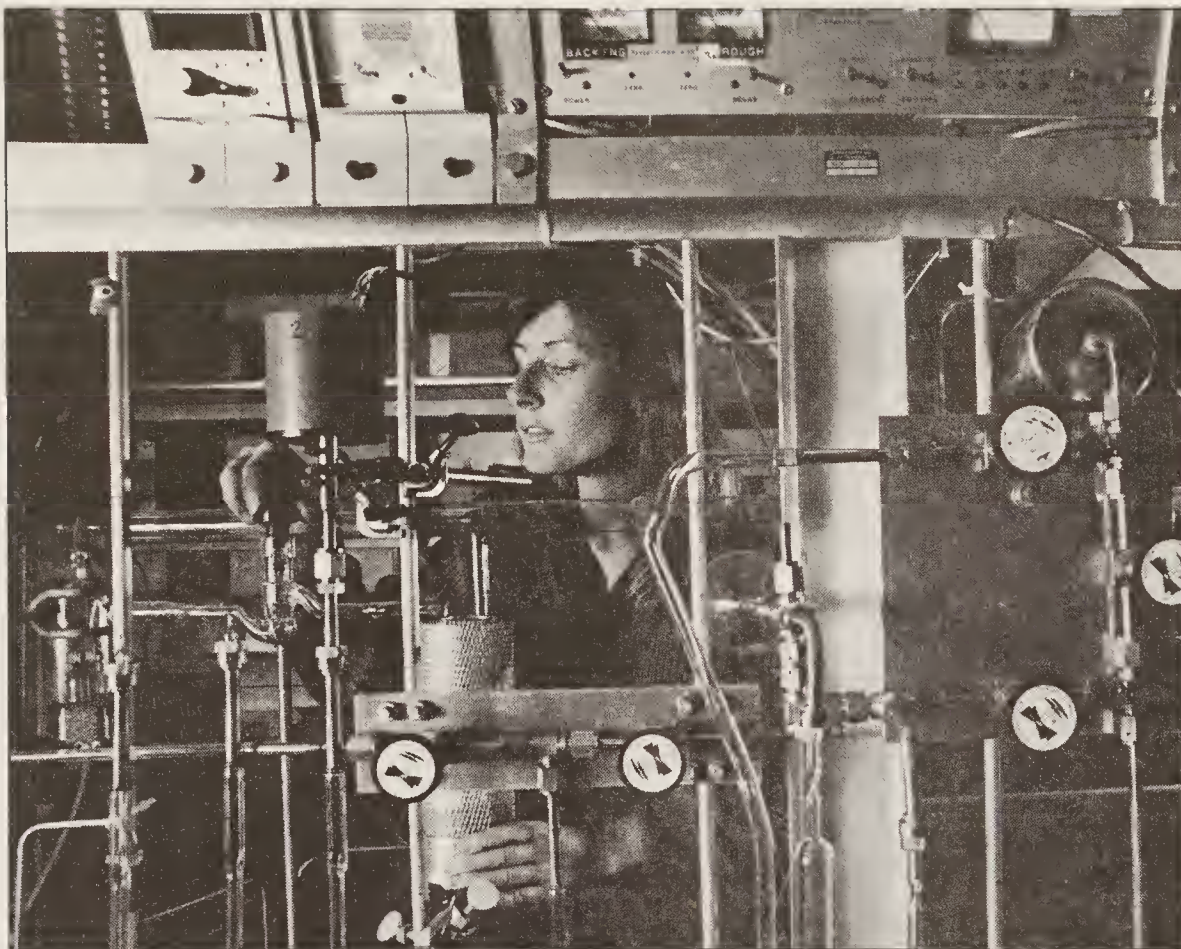
3. Students who were ineligible for admission to the university as freshmen because of low grades, lack of required subjects, or a combination of both, will be eligible after earning a grade-point average of 2.4 or better in at least 84 quarter-units (or 56 semester-units) of college credits accepted by the university for transfer. Additionally, high school subject deficiencies beyond the allowable limit must be satisfied by completion of appropriate college courses with a grade of C or better. The English and mathematics deficiencies may not be waived and must be made up with appropriate college courses.

ADMISSION BY EXCEPTION

A limited number of students who have not met the regular requirements for admission, but who can offer evidence of their potential to succeed at the university, may be considered for admission by exception. Information on such admission may be obtained from the Office of Admissions.

EDUCATIONAL OPPORTUNITY PROGRAM

The Educational Opportunity Program (EOP) provides the opportunity for entrance to the university to students of minority and low-income background who might not be able to attend otherwise. Prospective students who meet the regular admission requirements, as well as those who do not, may apply to the university. To be considered for EOP, a student must submit a regular undergraduate application for admission and state an interest in



Technician Karen Thornberry checks a high-vacuum line leading into a mass spectrometer in the laboratory of geochemist Dr. John Lupton. Specially tuned to analyze isotopes of helium, the spectrometer is being used to study helium extracted from geothermal and volcanic fluids. Ratios of different helium isotopes found in a material can provide clues to its origin, for example, whether it was formed in the earth's crust or mantle.

EOP. Prospective EOP students must show a potential to benefit from higher education. Financial aid, counseling, tutoring, and housing assistance are available under the program. Interested students should apply as early as possible.

ADMISSION OF NONRESIDENTS

A legal definition of California residency is included in the Appendix.

Freshman applicants.

Nonresidents are eligible for freshman admission if:

1. they have maintained a grade-point average of 3.4 or higher in the required high school subjects and have completed the same pattern of tests as required for California residents, as noted earlier; or,
2. their scores on the three CEEB Achievement Tests total at least 1730 with a score of not less than 500 on each, and their score on the SAT test is a minimum of 1100 (or a minimum of 26 on the ACT).

Advanced-standing applicants.

Nonresident advanced-standing applicants who meet the requirements for nonresident freshman admission

need a minimum grade-point average of 2.8 in college courses that are accepted by the university for transfer credit. If they were not eligible for admission when they graduated from high school, they must complete at least 84 quarter-units (or 56 semester-units) of transferable work with a grade-point average of 2.8 or higher. High school subject deficiencies beyond allowable limits must be satisfied by completion of appropriate college courses with a grade of C or better.

ADMISSION OF INTERNATIONAL STUDENTS

The Office of International Students and Scholars, Building 434, provides information and assistance to international students.

Applying to UCSB. Applications are accepted during the priority filing period for fall quarter only; no applications are accepted for winter or spring quarters.

Nonimmigrant students are governed by the same regulations as students from the United States with regard to undergraduate and graduate admission. In addition, every entering nonimmigrant student whose native

language is not English must demonstrate written and oral competence in English by taking the Test of English as a Foreign Language (TOEFL). A minimum TOEFL score of 500 is required for undergraduate admission, and 550 for graduate admission.

An international student applying for admission to the lower division of the College of Engineering must pass with satisfactory scores the College Entrance Examination Board Scholastic Aptitude Test (verbal and mathematics sections) and the Achievement Tests in English composition, physics, and advanced mathematics before a letter of admission to the College of Engineering can be issued. On the Scholastic Aptitude Test, the total score must be 1100, with a minimum of 500 in each test (verbal and mathematics sections). On the Achievement Tests, the total score must be 1730, with a minimum of 500 in each test (English composition, physics, and advanced mathematics).

Arrangements to take these tests may be made directly with the College Entrance Examination Board, P.O. Box 592, Princeton, NJ 08540, or 1947 Center Street, Berkeley, CA 94704. The UCSB institution code is 4835. The applicant should request that the test score be forwarded to the UCSB Office of Admissions, or to the Graduate Division, whichever is applicable.

English Language Placement Examination.

All students (undergraduates and graduates) for whom English is not the native language are required to take the English Language Placement Examination (ELPE) at the beginning of the first quarter in which they register.

Based on ELPE scores, students may be declared exempt from taking English as a Second Language (ESL) classes, or they will be required to take ESL classes. Undergraduate students who are exempt from ESL classes must meet the university's Subject A requirements. Note: For undergraduate students, ESL courses taken at UCSB or at any other college will carry no units toward the bachelor's degree.

LIMITED STATUS

Students who already have a bachelor's degree and who are interested in taking additional upper-

division undergraduate courses to prepare for graduate and undergraduate professional programs may qualify for admission to limited status.

Applications for limited status must be approved by both the director of admissions and the provost or dean of the college in which the student plans to enroll. Admission will be granted only to students whose records demonstrate promise of success in the area to be studied. Applications for study in oversubscribed areas will be reviewed by the department concerned and may be subject to special restrictions.

Limited status students may not enroll in graduate-level courses or apply courses completed in limited status toward graduate programs at UCSB. Limited status is granted from the quarter in which the student first enrolls through the last quarter of the same academic year. Subsequent study on limited status requires a new application.

CREDIT FROM ANOTHER COLLEGE

Subject to the following limitations, the university accepts, at full value, approved transfer courses completed with satisfactory grades in accredited colleges. Students in the College of Engineering or the College of Creative Studies may earn up to 105 transferable quarter-units (or 70 semester-units) toward a university degree at a community college. Students in the College of Letters and Science may earn unit credit for community college work until they have completed a total of 105 cumulative transferable quarter-units in college work, both at the university and any other colleges attended. Subject credit for transferable courses in excess of those units will be granted.

INTERCAMPUS TRANSFER

Students who have been enrolled in a regular session of any campus of the University of California may apply for an intercampus transfer to another UC campus provided they have not been enrolled subsequently in a regular term at another collegiate institution. Intercampus Transfer Applications, which include complete instructions, application dates, fees, and mailing information are available in the Registrar's Office at each UC campus. Students may be ineligible for

intercampus transfer if they are not in good academic standing at the end of their final term at the home campus. In addition, intercampus transfer applicants in oversubscribed majors may be subject to supplementary admission requirements. Students are encouraged to contact advising personnel in the department of choice at the intended new campus before filing an application for intercampus transfer.

Students who have completed course work elsewhere after leaving the UC system must apply for advanced-standing admission to the new campus of their choice; they are no longer eligible for intercampus transfer.

UNIVERSITY BACHELOR'S DEGREE REQUIREMENTS

To be eligible for a bachelor's degree from the University of California, Santa Barbara, students must meet the general university requirements, described below, and the appropriate general education and major requirements in their college, described in subsequent sections of this catalog and in the publications of the colleges. They must also comply with university regulations governing registration, scholarship, examinations, and student conduct.

University bachelor's degree requirements include the Subject A-English Composition requirement, the American History and Institutions requirement, the unit requirement, the academic residence requirement, the grade-point average requirement, and major requirements.

Subject A-English Composition Requirement

Every undergraduate must demonstrate an acceptable level of ability in English composition. Satisfaction of the Subject A-English Composition requirement is determined by the Office of Admissions at the time a student is admitted to the university.

The Subject A requirement may be met in one of four ways prior to admission: (1) by achieving a score of 600 or higher on the College Entrance Examination Board (CEEB) Achievement Test in English Composition; (2) by achieving a grade of 3 or higher on the CEEB Advanced Placement Examination in English Composition and Literature or English Language and Composition; (3) by

passing the University of California systemwide Subject A Examination while in high school; (4) by entering the university with transcripts showing the completion of an acceptable three-semester-unit or four-quarter-unit course in English composition equivalent to English 2A at UCSB, with a grade of C or better.

Students who have not taken the UC systemwide Subject A Examination and who have not satisfied the Subject A requirement in one of the other ways listed above will be required to take the UCSB Subject A Writing Sample examination during the first quarter at UCSB; see the *Schedule of Classes* for examination time and location. A passing score on the Writing Sample will satisfy the Subject A requirement. Only one UC examination may be taken, either the systemwide Subject A Examination while in high school or the UCSB Writing Sample Examination, and neither may be repeated.

Students who enter UCSB without having fulfilled the university's Subject A requirement and who do not pass the UCSB Writing Sample Examination must enroll in English 1 within their first two quarters at UCSB. A grade of C or higher in English 1 is needed to satisfy the Subject A requirement. Students who earn a grade of C- or lower in English 1 will be required to repeat the course in successive quarters until the requirement is satisfied. Once students matriculate at UCSB they may not fulfill the requirement by enrolling at another institution.

American History and Institutions Requirement

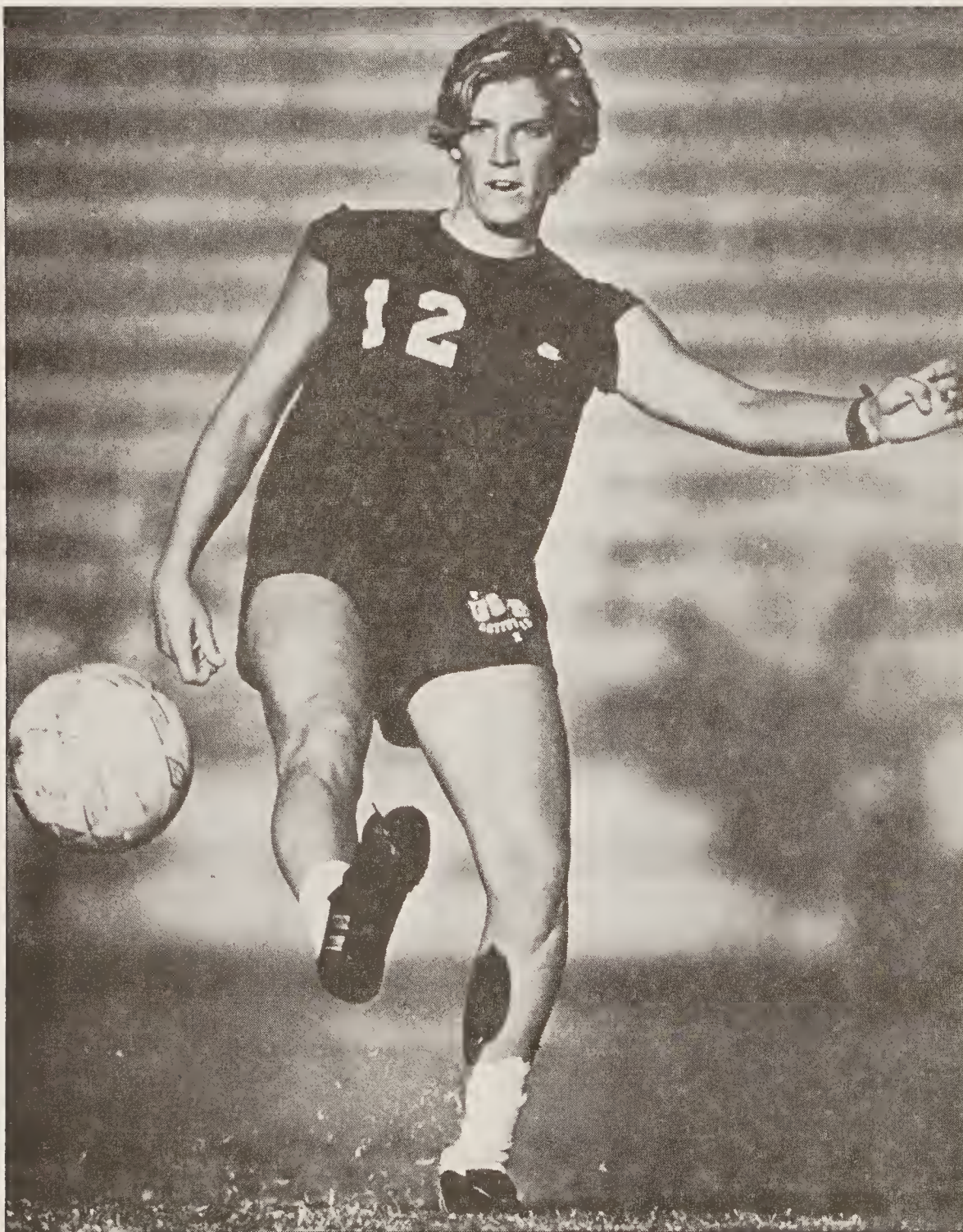
The American History and Institutions requirement is based on the principle that American students enrolled at an American university should have some knowledge of the history and government of their country. This requirement may be satisfied by completion of any two courses chosen from the following list. In this context, "course" refers to a one-quarter offering such as History 17A or Religious Studies 114B.

- Anthropology 131
- Art History 161A-B-F-G
- Asian American Studies 100A-B, 110
- Black Studies 1A, 101, 103, 110, 121, 126
- Chicano Studies 1A-B-C, 105, 144, 168A-B, 174, 188A-B-C
- Communication Studies 140A-B

- Dramatic Art 155
- Economics 113A-B, 119
- English 130A-B-C, 133A-B-C, 135, 137, 138A-B-C, 141
- German 147
- History 9A-B, 17A-B-C, 72, 74, 102, 105, 159A-B-E, 160A-B, 161, 162A-B, 164A-C-I, 165, 166A-B, 167A-B-C-D, 168A-B, 169A-B-M, 171A-B, 172A-B, 173A-B-C-S-T, 174A-B-C-D, 175A-B, 176A-B, 177, 178A-B-M, 179, 179D
- Law and Society 100
- Military Science 1A-B-C, 7, 8, 9, 11. Note: Military Science courses are two units each. Two Military Science courses equal *one* acceptable course for the American History and Institutions requirement.

- Philosophy 119
- Political Science 5, 10, 12, 15, 100, 113, 115, 127, 152, 153, 155, 157, 158, 161, 162, 165, 166, 167, 168, 174, 176, 180, 185
- Religious Studies 7, 14, 114B-C, 151A-B, 152, 153, 154
- Sociology 137, 140, 144, 155A, 157

Courses used to fulfill the American History and Institutions requirement may also be applied to General Education or major requirements, or both where appropriate. Equivalent courses taken at other accredited colleges or universities, in UC Extension, or in summer session are acceptable as determined by the Office of Admissions upon receipt of the appropriate transcripts.



Hailed by many as the Pél  of women's soccer, UCSB Athlete of the Year and four-time All-American Carin Jennings is a member of the U.S. National team and all-time top scorer in the history of the college sport, with a record 102 goals and 60 assists.

The American History and Institutions requirement may be satisfied in two additional ways: (1) by achieving a score of 3 or higher on the CEEB Advanced Placement Examination in American History; or (2) by passing a noncredit examination in American history or American institutions offered in the Department of History during the first week of each quarter. Consult the department for further information.

International students on a nonimmigrant visa may petition for a waiver of this requirement through the Dean of International Students and Scholars.

Unit Requirement

A total of 180 quarter-units is required for graduation. (Some students in the College of Letters and Science will need 184 units to graduate.) These units must be distributed according to the minimum requirements set forth by the faculty of the various colleges, as explained in the following sections of this catalog and in the publications of the colleges.

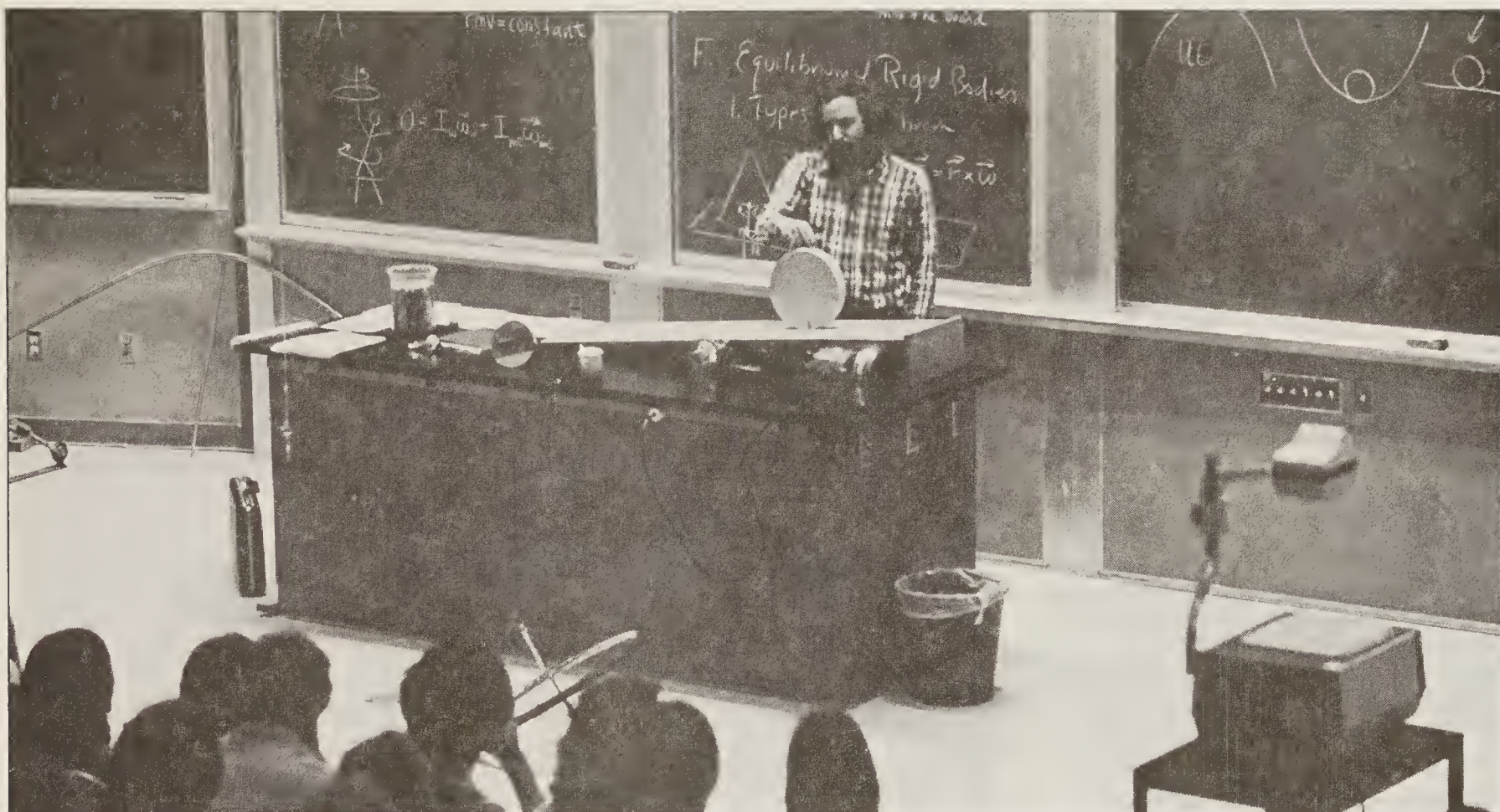
The acceptability of transfer courses for unit credit is determined by the Office of Admissions. The applicability of such courses toward specific requirements is determined by the college provost or deans and/or department chairs.

Academic Residence Requirement

Candidates for a bachelor's degree must be registered in the university for at least three terms to fulfill the university's academic residence requirement. A term is a regular quarter in which a student enrolls in six or more units of resident (on-campus) courses. Each UC summer session in which at least two units are completed is the equivalent of half a term's residence.

At least 35 of the final 45 units must be taken in the college or school in which the degree is to be awarded. No more than 18 of the final 35 units may be completed in summer session courses at UCSB.

College of Letters and Science residence requirement. Students in the College of Letters and Science must complete at least 27 upper-division units, of which at least 18 must be in the upper-division major, while in residence in the college. In the case of double majors, at least 18 upper-division units must be



Lecturer Robert Prigo discusses conservation of angular momentum in an introductory physics course.

completed in each major while in residence in the College of Letters and Science. Courses taken in the university's Education Abroad Program do not apply to the residence requirement.

Education Abroad Program participants. Students in the Education Abroad Program are responsible for completion of the academic residence requirement discussed earlier, with one modification: with prior approval, EAP students may satisfy the 35-unit residence requirement by earning 35 of their final 90 units (instead of 35 of the final 45) at UCSB. Students who participate in EAP during the senior year may graduate without returning to UCSB provided they have completed all degree requirements and have received prior permission from their major department to do so. Seniors who have not completed all degree requirements by the end of their year abroad must return to UCSB and complete a minimum of 12 units on campus while completing final degree requirements.

Grade-Point Average Requirement

At the time of graduation, students in the College of Engineering and the College of Letters and Science must have at least a 2.0 (C) grade-point average in: (1) all courses undertaken

at the University of California (UC) except those graded passed/not passed; (2) all UC courses required and acceptable for the student's overall major program, both lower and upper division; and (3) all UC courses required and acceptable for the student's upper-division major program. Courses undertaken at any of the UC campuses, except for UC Extension courses, are included in computation of the grade-point average.

Courses appropriate for satisfying major requirements must be used in the computation of the grade-point average even if they are in excess of the minimum requirements of the major program. Courses graded Incomplete, except those taken on a passed/not passed basis, will be included as F grades in final computations. Certain courses designated as remedial are offered for work-load credit only and do not figure in calculation of the grade-point average.

Students in the College of Creative Studies must, at the time of graduation, have a grade-point average of at least 2.0 (C) in all UC courses that have been undertaken for letter grades.

Major Requirements

To be eligible for graduation, all undergraduates must complete the requirements for a departmental or interdepartmental major in their college with the required grade-point average. As space permits, students may elect any approved major program for which they have met the stated prerequisites. Major departments and/or committees may require auditions, placement examinations, specified courses, and/or grade-point averages to determine whether students are qualified for specific courses or for entrance into or continuation in a major.

Students who fail to attain a grade-point average of at least 2.0 in work in their major may, at the option of the major department or committee, be denied the privilege of continuing in that major.

Students in the College of Engineering and the College of Letters and Science normally must complete the major requirements in effect at the time they declare their major, though they may petition to follow a subsequent set of requirements. Changes in major requirements that increase the number or distribution of courses required normally will not be applied to students continuing in such majors.

ACADEMIC PROCEDURES AND REGULATIONS

Enrollment

For each quarter, every UCSB student must register in courses and pay fees and any other outstanding financial obligations. Each step must be completed at a specific time. Details of the registration procedure are included in registration materials and in the *Schedule of Classes*.

The failure of an undergraduate student to complete the steps involved in enrollment by the specified deadlines will constitute presumptive evidence that the student has withdrawn from the university. A student whose status has been lapsed because of failure to register or pay fees and who wishes to resume study will be required to file an application for readmission and pay the associated nonrefundable fee. Readmission is not guaranteed.

Undergraduate students who are subject to academic disqualification may not officially enroll until and unless they are reinstated on academic probation by the dean or provost of their college or school. Students with outstanding financial obligations to the university will not complete enrollment until the financial obligations are met or officially deferred by the Office of Billing, Accounts Receivable, and Collections (BARC).

Enrollment limits. The average academic study load for undergraduate students is 15 units a quarter; the minimum full-time study load is 12 units. Students who are not able to carry at least 12 units a quarter must petition to register in a deficit (or part-time status) program at the time of registration. Students in the College of Letters and Science may petition for permanent approval of deficit programs. Under certain conditions, reduced fees may be available through the Office of the Dean of Students for students who have advance permission to carry 10 or fewer units a quarter.

The maximum number of units allowable each quarter varies among the colleges; these limits are published in the college announcements and the *Schedule of Classes*. Students who wish to enroll in more than the maximum number of allowable units must petition for an excess program at the time of registration.

Changes in course enrollment.

After registration, changes in course enrollment can be made only with necessary approvals and no later than the deadlines published in the *Schedule of Classes* for that quarter. Such changes include course drops, additions, or alterations in grading options. Unapproved withdrawal from or neglect of a course in which a student has enrolled will result in a failing grade.

Medical Evaluation Requirement

New and returning students who have not been officially enrolled on the UCSB campus for a year or longer are required to submit to the UCSB Student Health Service a completed medical history (UCSB SH Form 1A).

The university strongly recommends that students have a physical examination by a personal physician within one year prior to the first day of classes at UCSB. An examination is required for students who plan to participate in athletic activities or who are admitted to a UCSB teaching credential program. UCSB SH Form 1B is available for reporting this physical examination.

While health insurance is not required except for international students, it is strongly recommended. An optional accident and sickness insurance plan that supplements the services offered by the Student Health Service is available at a low fee. Enrollment cards and more information are available at the Student Health Service on campus.

Absence and Withdrawal

Temporary absence during a quarter. Undergraduate students enrolled at UCSB who have been or will be absent from classes for a brief period of time for reasons beyond their control should notify the Office of the Dean of Students. Regardless of the reasons for absence, students will be required to complete all course work.

If an absence is late in the term and prolonged, making it impossible to complete the course work on time, students may petition their instructors to assign an Incomplete (I) grade. To receive an I grade, students must submit the approved petition to the Office of the Registrar by the last day of the quarter in which the I is to be assigned. A student who is unable to make this request personally may ask

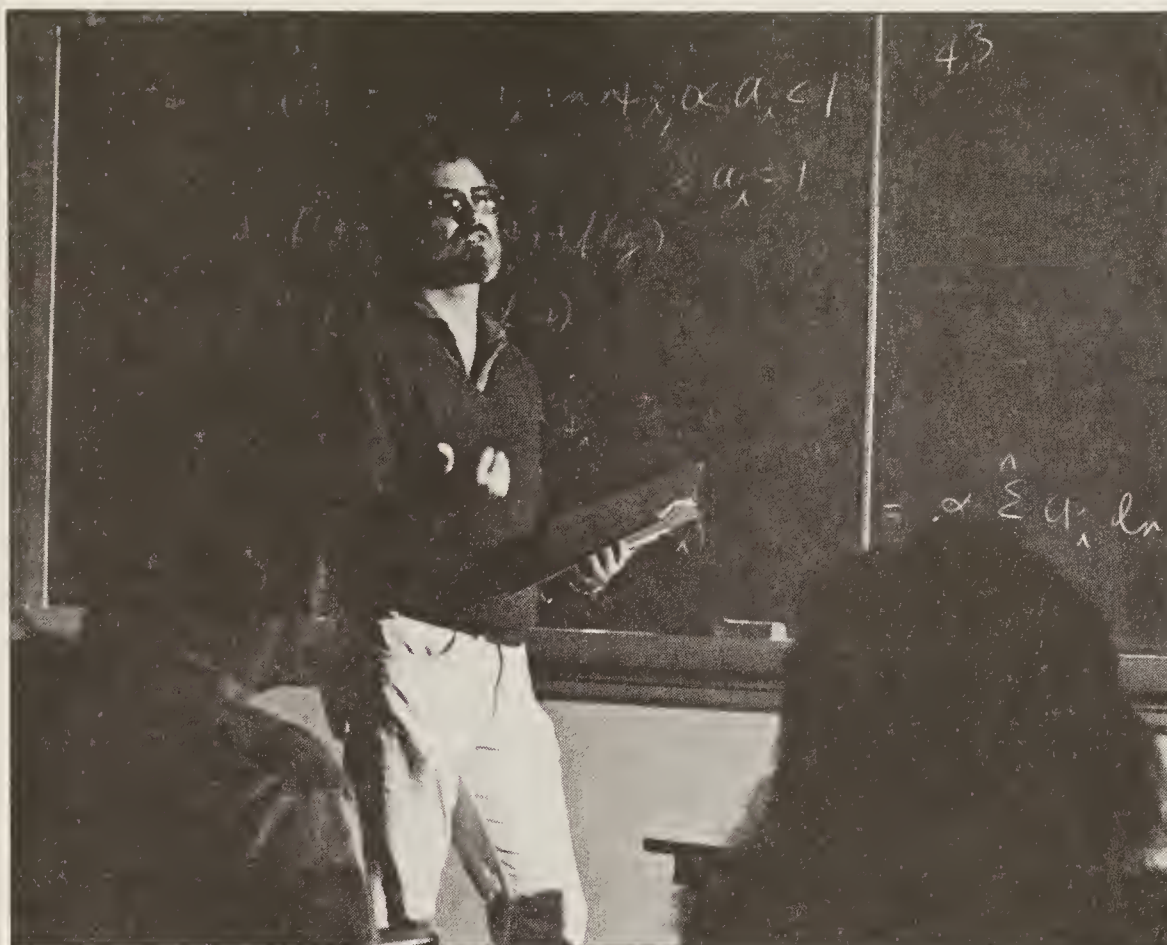
the Office of the Dean of Students to notify each instructor of the circumstances of the absence and to circulate a petition on the student's behalf. If the instructor agrees that an extension of time for completion of the course is justified and approves the petition, a grade of Incomplete will be assigned.

Withdrawal from a course. To withdraw from a course after the established deadline each quarter, undergraduates must petition for and obtain the approval of the provost or dean of their college, as stated in the *Schedule of Classes*. The provost or dean may cancel the student's enrollment in the course or may excuse the student from attending the course and direct the Office of the Registrar to enter a grade of F or not passed (NP), as appropriate, on the student's record. The provost or dean may also stipulate that future enrollment in the same course be subject to approval.

Complete withdrawal. Once fees have been paid or officially deferred, or after a financial aid agreement has been signed for a particular quarter, students then wishing to withdraw for that term without completing the enrollment process must do so by petition to the Office of the Registrar.

An enrolled student who withdraws from the university during a quarter without completing the quarter's work must obtain from the Office of the Registrar a Petition for Complete Withdrawal. If the petition requirements are met and the approval of the college provost or dean is secured, the student's enrollment will be cancelled without penalty. A student who receives permission to withdraw completely during the early weeks of a quarter may be entitled to a partial refund of fees for that quarter as outlined in the *Schedule of Classes*. Upon request, the Office of the Dean of Students will process a Petition for Complete Withdrawal for a student who cannot do so personally.

Students who enroll and subsequently discontinue work during a quarter without an approved petition for withdrawal will receive F, NP (not passed), or U (unsatisfactory) grades, as appropriate, for all courses in which they are enrolled for that quarter. Such students are ineligible for any refund of fees, and their future registration privileges may be curtailed or revoked.



Economics professor Ted Frech addresses a classroom of first-year graduate students in his course "Mathematics for Economists," an intensive two-week review of selected topics in mathematics, particularly calculus and linear algebra.

Before withdrawing, students are advised to seek counsel from faculty, departmental, or college advisers, or from the Counseling Center so as to consider the full implications of this action. After withdrawal and before future registration, undergraduates must apply for and receive permission to be readmitted.

Lapse of status. Lapse of status is the automatically enforced withdrawal of a student from the university. A student's status may be lapsed (1) for failure to register by the deadlines stated in the *Schedule of Classes*; (2) for failure to settle financial obligations when due or to make satisfactory arrangements with the Billing, Accounts Receivable, Collections Office if payment cannot be made; or (3) for failure to respond to official university notices. Students who have had their status lapsed are required to pay a prorated portion of all assessed fees up to the date of such lapse in accordance with the fee refund schedule in the *Schedule of Classes*.

Leaves of absence. At the conclusion of any quarter, undergraduates may leave the university for one or more quarters without petition *provided they have not paid fees for the following term*. Petitioning for complete withdrawal is

required only when an undergraduate withdraws during a quarter, has paid or promised to pay fees, or is requesting a refund of fees for the following quarter. Graduate students who withdraw during the first three weeks of a quarter may apply for a leave of absence for that quarter. Graduate students who have received a leave of absence from the Graduate Division also must file for withdrawal with the Office of the Registrar.

Readmission. Undergraduate students who wish to register at UCSB after an absence, or after complete withdrawal, cancellation, or lapse of their registration, must file an application for readmission with the Office of the Registrar. Official transcripts of any work undertaken elsewhere in the interim must be submitted. The opening dates for applying for readmission are noted in the calendar at the beginning of this catalog. The application periods, which are published in the *Schedule of Classes*, may be closed earlier without notice, pending enrollment restrictions.

Undergraduates who were on reinstatement-probation or who were subject to academic disqualification when they left the university will not be readmitted unless they are reinstated by the provost or dean of their

college, who may establish the conditions of such reinstatement.

Repetition of Courses

Certain undergraduate courses may be repeated for credit. These courses are identified in the course descriptions in this catalog.

Repetition of all other courses is subject to certain regulations, which pertain only to courses completed in the University of California, excluding those taken in UC Extension. The regulations are:

1. An undergraduate student may repeat only those courses in which a grade of C-, D+, D, D-, F, or NP was awarded. Such courses may be repeated for letter or passed/not passed grades if the courses are so offered and if the student is eligible for that option. In no case, however, shall an NP grade replace an earlier letter grade in the computation of the grade-point average. A course in which an NP has been received may be repeated on a letter-grade basis if so offered.

2. Undergraduates who wish to repeat a course more than once must obtain the prior approval of their college provost or dean.

3. Degree credit for a course will be given only once, but the grade assigned at each enrollment will be permanently recorded on the student's transcript.

4. In computing the grade-point average of an undergraduate who repeats courses in which grades of C-, D+, D, D-, or F were received, only the most recently earned grade and grade points in each course will be used for the first 16 units repeated. In the case of additional repetitions, both initial and repeated grades will be used in the computation of the grade-point average. All grades, however, remain a part of the student's permanent record.

5. Undergraduate students who plan to repeat a UCSB course at another UC campus, or vice versa, must petition the provost or dean of their college to establish the equivalency of the courses prior to the repetition.

6. Courses taken at other colleges or universities or through UC Extension are not included in grade-point average computations.

7. Students should indicate repeats at the time of registration.

Additional Enrollment Opportunities

Concurrent enrollment. Students who wish to enroll simultaneously in undergraduate courses at UCSB and at another college-level institution must obtain prior approval from the provost or dean of their college. Normally, such enrollment is approved only for courses that are not available in the curriculum at UCSB.

Simultaneous enrollment in two colleges or schools at UCSB, such as Engineering and Letters and Science or Creative Studies and Letters and Science, is also subject to the approval of the provost or deans of the colleges or schools involved.

Enrollment in University Extension courses.

An undergraduate student who wishes to complete courses through University Extension must obtain prior approval by petition to the provost or dean of the student's college. Extension courses are not included in determining grade-point averages and do not apply toward academic residence requirements. UC Extension courses in the 1-199 series may be counted toward graduation upon petition. Degree credit is not given for UC Extension courses in the X300 and X400 series.

Examinations

Final examinations. Final examinations are required in all undergraduate courses except those specifically identified in the *Schedule of Classes*. The official dates and times of all final examinations are published in the *Schedule of Classes*. No instructor is authorized to change these times without prior approval of the Committee on Undergraduate Courses, and students are responsible for arranging their programs so that their final examinations will not conflict. Normally, examinations will be written, and a maximum time period for their completion will be announced in advance. No student will be permitted to exceed this maximum. The maximum time for a final in a non-laboratory course is three hours. Individual exceptions from finals are not permitted except in the case of comprehensive examinations.

Comprehensive examinations. At the end of a quarter in which a student expects to graduate, the major department may: (1) examine the student's competency in the major

field; (2) exempt the student from final examinations in courses offered by the department during that quarter; and (3) with the approval of the Committee on Undergraduate Courses, assign a credit value to such a comprehensive examination.

Credit by examination. A student enrolled in fall, winter, or spring quarter (but not summer session) may petition to earn credit by examination during that quarter in an established course or in a subject appropriate for inclusion in the university curriculum without enrollment in the course. Petitions for credit by examination must be approved by the provost or dean of the student's college prior to the examination date. Ordinarily, credit by examination is limited to a total of 12 units.

Unit and grade-point credit for courses taken by examination will become part of the student's official academic record and, provided that the examination was taken on a letter-grade basis, will be computed in the cumulative University of California grade-point average. Students who wish to take credit by examination on a passed/not passed basis may do so only if they are eligible to take courses on that basis during that quarter, and if the course is open to that option. Failure to pass the examination will be recorded as an F or NP, whichever is appropriate; students are therefore encouraged to prepare fully for the examination.

Credit by examination will not be approved under the following circumstances: for the purpose of repeating a course; for subjects in which the student has completed more advanced work; or for basic courses in a student's native language.

Class Status

Undergraduate classification is determined by the number of units completed, as follows:

Classification	Units Required
Freshman	0-39.9
Sophomore	40.0-83.9
Junior	84.0-134.9
Senior	135.0 or more

Units of Credit

Credit for academic work at UCSB is expressed in *units*. Generally, the value assigned to a course is determined at the rate of one unit for each three hours of student work

each week. The unit value assigned to a course is determined by the number of class meetings each week and by the student's class preparation time.

Grading System

The following grades are used to report on the work of UCSB undergraduate students:

Undergraduate Courses	Graduate Courses
A (excellent)	A (excellent)
B (good)	B (good)
C (adequate)	C (adequate)
D (barely passing)	D (poor)
F (not passing)	F (not passing)
P (passed)	S (satisfactory)
NP (not passed)	U (unsatisfactory)
I (incomplete)	I (incomplete)
IP (in progress)	IP (in progress)

The grades A, B, C, and D may be modified by plus (+) or minus (-) suffixes. Grade points for each unit are assigned by the registrar as follows:

A+ = 4.0; A = 4.0; A- = 3.7;
B+ = 3.3; B = 3.0; B- = 2.7;
C+ = 2.3; C = 2.0; C- = 1.7;
D+ = 1.3; D = 1.0; D- = 0.7;
F, I, IP, P, NP, S, and U = 0.

Unit credit, but not grade-point credit, is assigned for P and S grades. For a description of the grading system in the College of Creative Studies, see the appropriate chapter in this catalog.

Incomplete Grades

The grade Incomplete (I) may be assigned when a student's work is of passing quality but is incomplete.

Petitioning process. An I grade may be placed on a student's record only if the completed I-grade petition, signed by the instructor and accompanied by payment of the necessary processing fee, is on file in the Office of the Registrar by the last day of the quarter. In the absence of the petition, or of a specific grade other than I, the registrar will record a grade of F, NP, or U.

Completion deadline. The student is entitled to have the grade of Incomplete replaced by a passing grade as determined by the instructor concerned, and to receive unit credit and appropriate grade points, upon satisfactory completion of the course work *by the end of the term following the term in which the I grade was reported*, whether or not the student

is enrolled or the course is offered. Unless the work is completed and a grade is reported to the Office of the Registrar by the deadline, the I will be changed automatically to F, NP, or U, as appropriate. If the instructor is unavailable, the chair of the department in which the course was offered is authorized to supervise completion of the work and to make the appropriate grade change. The chair also has authority to extend the deadline for completion in the event of unusual circumstances that would clearly impose an unfair hardship on the student if the original deadline were maintained.

An I grade on the student's record at the time of graduation in a course not necessary for the fulfillment of degree requirements may be removed only up to the end of the fifth week of the term following the date of graduation. An I grade may be removed by the student's submitting completed course work to the faculty member for the assigning of a new grade. If not removed, the I grade remains an I permanently.

These deadlines do not apply to the following graduate courses: 594, 595, 596, 597, 598, or 599. Incomplete grades in these courses must be replaced by a letter grade or S or U, as appropriate, by the end of the last quarter in which the student is registered prior to receipt of the master's or doctoral degree.

Grade changes to Incomplete. A grade may be changed to an I only with the approval of the provost or

dean of the student's college and successful completion of the petitioning process.

In-Progress Grades

The grade In Progress (IP) may be assigned provisionally in all but the last term of special courses extending over more than one term. In the last term, the grade assigned by the instructor replaces the provisional IP grades for all portions of the course. If the full sequence of the course is not completed in the last quarter, an IP grade will be replaced by the grade I and further changes of that grade will be subject to the conditions covering Incomplete grades. IP designations are not included in the computation of grade-point averages. Courses graded IP are identified in the *Schedule of Classes*.

Passed/Not Passed Grades

Passed/not passed (P/NP) grades are not included in the computation of university grade-point averages. Courses graded P, however, are acceptable for unit and appropriate degree credit. P grades will be assigned only for course work equivalent to a C or better on the letter-grade basis. NP grades will be assigned for work equivalent to a C- or below. No credit is given for courses graded NP.

Undergraduate courses may be offered exclusively on a P/NP basis with the prior approval of the

appropriate faculty committees. Such courses are specially identified in the *Schedule of Classes*. Students on academic probation, as well as those in good standing, may take such courses without special approval.

Students may elect the P/NP grading option provided they meet the following conditions:

1. They are in good academic standing (i.e., not on academic probation).
2. The course is open to all qualified students on this basis and is so advertised in the *Schedule of Classes*.
3. The course is not required or accepted for the student's major. Courses in the major, whether lower- or upper-division, in or outside of the major department, must be taken for a letter grade. With prior approval of appropriate faculty committees, a department may specify that certain "major" courses may be taken P/NP. Courses for which such approval has been granted are identified in the major department entries in this catalog.
4. They elect this option at the time of registration or thereafter, but not later than the end of the seventh week of classes. Students are responsible for determining whether they are qualified for enrollment in courses on a P/NP basis according to the requirements stated here.
5. At the time of graduation, they will have completed at least two-thirds of their units earned in residence at UCSB on a letter-grade basis. There is no limit on the number of courses which may be taken P/NP during a single quarter.
6. They have not been restricted or prohibited from the use of the P/NP option due to an excessive number of NP grades earned. Students with more than 8 units of NP grades in one quarter or with more than 20 units of NP grades in all terms of university enrollment combined may be so restricted. In the case of repeated courses in which the initial grade was NP, the original NP will not be included in this 20-unit total.
7. Students who take courses in their major department in excess of minimum major requirements may elect the P/NP option for those courses.



Grade Changes

All grades except I and IP are final when submitted to the registrar by the instructor in the end-of-term course report, subject to the provisions noted in "Contested Grades," mentioned below. Thereafter, an instructor may report a grade correction only in the case of clerical or procedural error.

An instructor also may change a grade in the quarter following that in which the original grade was received if the basis for the change is found in work previously accomplished in the course as a part of the student's regular participation in class activity. However, such changes must not create inequities to others whose grades remain unaltered. No final grade (except I) may be revised by re-examination, and no letter grade may be changed to or from P/NP. All grade changes to I must be accompanied by the necessary I-grade petition endorsed by the provost or dean of the student's college.

Contested Grades

A student may challenge a term grade on grounds that it was based on criteria not directly reflective of course work. Such criteria include discrimination on political grounds or for reasons of race, religion, sex, sexual orientation, age, or ethnic origin. The initial appeal must be submitted in writing prior to the end of the quarter following the term in which the grade was assigned. Full appeal procedures and review authorities are described in detail in the Appendix.

If the designated authorities determine that a grade reflects unacceptable criteria, as specified earlier, they will: (1) authorize retroactive withdrawal from the course; *or* (2) authorize the change of the contested grade; *or* (3) if it was offered in the College of Creative Studies, change the unit value of the course.

Transcript of Record

A record of each student's academic work at UCSB is prepared and retained permanently by the Office of the Registrar. Students should check their quarterly grade reports and immediately inform the Office of the Registrar of any discrepancies.

Transcripts of the official record may be obtained from the Office of the

Registrar. Requests for transcripts must be accompanied by \$3 for the first copy and \$1 for each additional copy requested at the same time. Students with financial obligations to the university will have transcripts withheld until such obligations have been officially cleared or extended. A request signed by the student is required for release of transcripts. Transcripts of work completed at another campus of the university or at another institution (including University Extension) must be requested directly from the campus or institution concerned.

Academic Eligibility

Academic probation.

Undergraduate students in the College of Engineering and the College of Letters and Science are placed on academic probation if their cumulative grade-point average in the University of California falls below 2.0 (C average) at the end of any quarter. While on academic probation, students are under the supervision of the provost or dean of their college. Students on academic probation will be returned to regular academic status if they raise their cumulative average to 2.0 or above by the end of their second quarter on academic probation.

Academic disqualification.

Undergraduate students in the College of Creative Studies, the College of Engineering, and the College of Letters and Science are subject to academic disqualification from further enrollment at UCSB:

- 1) if at the end of any quarter their grade-point average is less than 1.5 for that quarter; *or*
- 2) if their grade-point average for any quarter falls below 2.0 while they are on academic probation; *or*
- 3) if after two consecutive quarters on academic probation they have not raised their cumulative UC grade-point average to 2.0 or better.
- 4) if while on reinstatement-probation their quarter grade-point average is below 2.2 and their cumulative grade-point average is below 2.0.

Students who are subject to academic disqualification are not eligible to register again at UCSB until and unless they are reinstated on probation by the provost or dean of their college.

Reinstatement. Students subject to academic disqualification may appeal to the provost or dean of their college for reinstatement on probationary status. The provost or dean will decide if a student may be reinstated and may set conditions for reinstatement. Reinstated students may register at UCSB under the conditions set by their provost or dean and will be subject to the provost's or dean's supervision until they have regained regular academic status.

In order to transfer either from one UC campus to another or from one school or college to another on the same campus, students who are on academic probation or subject to academic disqualification must obtain the approval of the provost or dean of the college or school to which transfer is requested. Upon completion of the transfer, the student is subject to the supervision of the provost or dean of that college or school.

Graduation

Students are responsible for reviewing records carefully to ensure that they are completing all degree requirements. A New Student Profile listing degree requirements and any transfer credit earned is sent automatically to students when they are admitted to UCSB. A Graduation Check form is sent automatically to students at the end of the quarter in which they have identified themselves as degree candidates. As the Graduation Check is a final review of records, it occurs too late to be of assistance in deciding which courses to take during the last quarter. Students in the College of Letters and Science with 90 or more units completed may request a Progress Evaluation from the college office. Students with 135 or more units completed may request a Progress Evaluation from the Office of the Registrar; only one such request will be honored for each student. These official statements will indicate the student's progress in fulfilling university and college requirements. For assistance in reviewing major requirements, students should consult their major department adviser.

How to graduate. All candidates for degrees must announce their candidacy for graduation by the deadline given in the *Schedule of Classes*. This is done by filing an Undergraduate Petition for



The university's spring open house, called Super Saturday, draws roughly 14,000 interested visitors and prospective students, who can enjoy science and engineering demonstrations, art exhibits, international foods and entertainment, sports events, a children's carnival, and information booths on all aspects of university life.

Graduation with the Office of the Registrar in the quarter in which the degree is anticipated. In order to graduate at the end of a given quarter, students must complete all work necessary for the fulfillment of degree requirements (including transfer work) by the last day of the quarter. Students who find that they are not eligible to graduate as planned must file a Withdrawal of Candidacy for that quarter. A new Undergraduate Petition for Graduation must be filed for the new date of graduation.

Graduation ceremonies and diplomas. Although there are four possible dates of graduation each year (December, March, June, and August), graduation ceremonies are held only once a year, in June. Students whose names are on the degree list for one of the quarters in the current academic year (including August candidates for the degree) and who have completed or will complete all degree requirements as planned will be eligible to participate in these ceremonies. Information concerning graduation will be sent to candidates automatically during spring quarter. Those with questions about commencement ceremonies are asked to phone 961-3627.

Information on progress/degree checks may be obtained from the Office of the Registrar, 961-3171.

Diplomas are not available for several months after graduation. When they are ready, diplomas will be mailed to the address submitted on the Undergraduate Petition for Graduation on file in the Office of the Registrar. Undergraduate students who need official verification of graduation before the diploma is ready may order transcripts from the Office of the Registrar. If all degree requirements have been completed prior to the official date of graduation, and if immediate proof that requirements have been met is needed, students may request a letter of verification from the Office of the Registrar. Graduate students may consult the Graduate Division.

Honors at graduation. To be eligible for honors at graduation a student must have completed at least 76 units *for letter grades* within the University of California, including summer session but excluding UC Extension. On the basis of these grades, awards will be made to the top 20 percent of those graduating, in the following order:

Top 2.5%	— Highest Honors
Next 6%	— High Honors
Next 11.5%	— Honors

In exceptional circumstances, students not meeting these criteria may petition the Committee on Undergraduate Honors, Scholarships, and Prizes for special consideration. *Distinction in the Major* will be awarded to students who successfully complete a departmental senior honors program. *College Honors* will be awarded to students in the College of Letters and Science who, at the end of the term preceding graduation, have completed 135 or more graded units in the University of California with a grade-point average of at least 3.85.

Student Conduct and Responsibility

Personal conduct. Students registered in the University of California assume an obligation to act in a manner compatible with the university's function as an educational institution. The publication titled *Campus Regulations Applying to Campus Activities, Organizations, and Students*, available from the Office of the Dean of Students, describes policies and regulations of these issues.

Allegations of violations of campus or university regulations will be investigated by appropriate officials. The university reserves the right to make the final determination in any case of student discipline. All disciplinary actions are administered by virtue of authority vested in or delegated by the chancellor.

Academic conduct. The core of a university's integrity is its scholastic honesty. Academic dishonesty vitiates the university's educational role and defrauds all who comprise its community. It is expected that students understand and subscribe to the ideal of academic integrity and be willing to bear individual responsibility for their work. Materials submitted to fulfill academic requirements must represent a student's own efforts. Any act of academic dishonesty, such as plagiarism or other forms of cheating, is unacceptable and will be met with disciplinary action.

Student responsibility. Each student is responsible for compliance with the regulations printed in the *General Catalog*, in the college announcements, and in the *Schedule of Classes*, and with official notices

published in the campus newspaper or posted on official bulletin boards. Changes of name or address or both must be reported to the Office of the Registrar immediately.

Student work. All material, of whatever nature, submitted by a student in satisfaction of all or any portion of a course requirement, is the property of the university and is not subject to any claim on the part of the student who has submitted it. Any material produced by a student

independent of any course requirement must be removed from university premises no later than the last day of the quarter in which the work was produced. The university assumes no obligation to hold or safeguard such material, and the risk of possible destruction, loss, or other disposition is assumed solely by the student.

Authority of instructors. Each instructor has the authority to determine whether a student is

sufficiently prepared to enter upon or to continue in the study of that instructor's subject. However, an instructor may not exclude a student from a course on political grounds, or for reasons of race, religion, sex, sexual orientation, age, ethnic origin, handicap, or for other arbitrary or personal reasons. A student who believes that such criteria were used may challenge the instructor's decision by means of the grievance procedures set forth in the Appendix.

Graduate Education at UCSB

Graduate Division, Cheadle Hall 3117; Telephone (805) 961-2277
Academic Affairs, 961-2559; Admissions, 961-2278; Affirmative Action, 961-3803;
Fellowships and Student Support, 961-2710
Dean: David S. Simonett



I have been a graduate student in the anthropology department for five years. At present, I am completing my field work on rural Chicano/Mexican households in nearby Santa Maria Valley, getting one step closer to my Ph.D. degree. It may seem unusual for an anthropologist to be studying a culture so close to home, but it is not uncommon. Many of us are staying home for a variety of reasons, but perhaps the most important is the need to examine and understand the diverse and changing cultures in our country, an area in need of ethnographic research.

I have found my graduate studies at UC Santa Barbara to be stimulating and challenging. The courses in the anthropology department are demanding and of high caliber, and the faculty are available and willing to work with students. In addition, the Graduate Division and the organized research units, such as the Center for Chicano Studies, provide graduate students with research opportunities and funds to conduct their own investigations. Overall, campus facilities and their resources and local research sites make UC Santa Barbara an ideal place for graduate work.

Victor Garcia
Doctoral candidate
Department of Anthropology

Graduate students at UCSB are an essential part of the university's world-famous research teams. They work with faculty in the search for new knowledge from the time a project is defined, through the laboratory or library inquiry that illuminates the problem, to dissemination of findings in scholarly journals, professional conferences, and classrooms. Graduate degrees at UCSB are research degrees, certifying that students are trained in the techniques of independent inquiry in their fields.

UCSB offers graduate programs leading to the degrees of Doctor of Philosophy, Master of Arts, Master of Education, Master of Fine Arts, and Master of Science. In addition, the Graduate School of Education offers preparation for teaching and specialist credentials. Programs leading to a certificate of completion of a graduate curriculum are offered by the College of Engineering, the Graduate School of Education, and the Department of Germanic and Slavic Languages and Literatures. A complete chart of degrees and certificates offered appears in the first chapter. See "The University of California, Santa Barbara."

THE GRADUATE DIVISION

Policy for graduate education is set by the Graduate Council (a faculty committee) and carried out by staff in the Graduate Division under the supervision of the graduate dean.

The division has three sections. Admissions handles recruitment and applications for admission. The Enrolled Student Services unit administers fellowships, monitors the progress of students toward the degree, enforces academic standards, processes student

petitions, and certifies student status for campus employment. Affirmative Action deals with the recruitment and retention of graduate students from ethnic minorities and of women in fields where they are traditionally underrepresented.

The Graduate Division also sponsors occasional special projects for graduate students, such as dissertation support groups, research colloquia, and grant development workshops. The division encourages the use of its records and facilities for research on graduate education.

APPLICATION AND ADMISSION

Applicants for admission to graduate school at UCSB must have completed (or be close to completing) a bachelor's degree or its equivalent at an accredited institution. The overall grade-point average for upper-division work should be strong; grades in the major should indicate that the applicant has a good chance of succeeding in graduate work. Admissions decisions are based on a review of applicants' previous grades, letters of recommendation, standardized test scores, and academic goals as revealed in the statement of purpose. No one criterion prevails.

Applications are available from the major department or Graduate Division. A nonrefundable \$35 fee must accompany all completed applications for admission. Deadlines for applications are: May 1 for the following fall quarter; November 1 for winter quarter; February 1 for spring quarter; and May 1 for summer session. Many graduate programs have earlier deadlines; consult the graduate application and individual academic departments for details.

The *Graduate Division Announcement*, the *Graduate School of Education Announcement*, and the *College of Engineering Announcement* contain additional information about advanced degree programs. These publications are available from academic departments and the Graduate Division.

Admission of a student to a graduate program does not constitute a commitment on the part of the university to accept the applicant as a candidate for a degree or to recommend the applicant for a credential or a degree.

TRANSFER OF CREDIT

Upper-division and graduate courses may be transferred to UCSB if the student was in a graduate program when the courses were completed. With approval from the major department and the Graduate Division, up to eight quarter-units of credit for courses completed with a grade of B or better may be transferred as upper-division credit toward a graduate degree from an accredited college other than another branch of the University of California. Up to 12 quarter-units may be transferred from another UC campus. Such transferred units will be treated as Passed/Not Passed and will not be counted in the grade-point average. Units counted for a degree awarded by another institution are not transferable.

No credit will be allowed for any course taken as an undergraduate or as a graduate in non-degree status, nor will credit toward an advanced degree be given for courses completed in a teaching credential or translator-interpreter program *before* being admitted for study toward a degree. No courses taken in UCSB Summer Sessions will apply toward a graduate degree or teaching credential unless admission to graduate standing at UCSB was effective in the summer or in a previous quarter.

After students have been in graduate standing at UCSB for at least one quarter, they may petition to transfer credit under the limitations described above. Petitions are available from the Graduate Division and academic departments.

ENGLISH AS A SECOND LANGUAGE

All graduate students who are non-native speakers of English must meet proficiency requirements in spoken and written English before they will be awarded a degree at UCSB. Non-native speakers are required to take the English Language Placement Examination (ELPE) at the beginning of the quarter they enter UCSB. All international students seeking teaching assistantships will also be tested for oral skills, and only those who demonstrate adequate language proficiency will be eligible for classroom teaching responsibilities.

INTERCAMPUS EXCHANGE PROGRAM FOR GRADUATE STUDENTS

Enrolled graduate students at UCSB may study for a quarter at other UC campuses. By applying to the Intercampus Exchange Program for Graduate Students, students may enroll in courses not offered at UCSB, study under the guidance of a specialist in residence at another UC campus, or gain continuing access to library holdings of facilities not available at UCSB. Consult the UCSB Graduate Division or the *Graduate Division Announcement* for further details.

FINANCING GRADUATE EDUCATION

Most graduate students at UCSB receive some financial support through the university. Students increase their chances of obtaining financial awards if they apply for all forms of aid for which they might be eligible. All applicants for fellowship support are required to submit their scores on the Graduate Record Examination (GRE). Continuation of multi-year awards is contingent upon satisfactory academic performance. The deadline for fellowship application is January 31.

Regents Special Fellowship. The Regents Special Fellowship is UCSB's most prestigious fellowship award. It provides four years of support, including stipends, teaching/research assistantships, payment of fees, and access to university housing. Incoming graduate students are nominated for this award by their prospective departments and they are selected by a committee comprised of the university's most distinguished faculty. Successful nominees usually have a

3.8 grade-point average or better and a combined verbal/quantitative GRE percentage score of 180 or higher.

Regents and University

Fellowships. A limited number of Regents and University Fellowships are awarded to outstanding students regardless of their ethnic or national origin. Candidates generally have grade-point averages of at least 3.5, strong letters of recommendation, and scores in the 85th percentile or higher in either the verbal or the quantitative section of the GRE. Amounts of these awards vary and may include a combination of stipend, fees, and/or tuition payment.

Campus Special Fellowship. The Campus Special Fellowship is awarded to outstanding minority graduate students by the university's Affirmative Action Fellowship Committee. Recipients are offered four years of support, including stipends, teaching/research assistantships, payment of fees, and access to university housing.

Campus and Graduate

Opportunity Fellowships. These affirmative action fellowships are reserved for members of ethnic minorities traditionally underrepresented in graduate school, as well as for women in certain fields. They provide stipends and full fee payments. Information on eligibility requirements is available from the Graduate Division's affirmative action coordinator. Telephone: 961-3803.

Nonresident tuition fellowships.

Students who are not residents of California may apply through their departments for nonresident tuition fellowships, which may be awarded for full or partial payment.

Need-based financial aid. Loans, grants, and work-study monies are available through the Office of Financial Aid. These need-based funds represent approximately one-third of the total university monies available to graduate students. Telephone: 961-2432.

Academic employment. Academic employment forms the single largest category of university support for graduate students. UCSB enrolls approximately 15,000 undergraduates and 2,000 graduate students. Graduate students are in demand as teaching assistants, teaching associates, tutors, readers, laboratory assistants, and members of research teams. Extramural support of

research at UCSB is, on a per capita basis, among the highest in the country.

Nonacademic employment. The University Placement Center lists clerical, food service, and other nonacademic employment opportunities.

Extramural funding. Grants, fellowships, loans, and scholarships from government agencies and industry are available. The Graduate Division maintains updated files of possible funding sources. Academic departments often have special sources of support for their discipline.

THE MASTER'S DEGREE

Following are the Graduate Division's minimum requirements for the master's degree. Individual academic departments may impose additional requirements; students should consult the department for specific unit requirements, which may be in excess of the minimum.

Academic residence. Students in master's degree programs must spend a minimum of three quarters in full-time residence at UCSB. At least one quarter must be a regular session (fall, winter, or spring quarter) during which time the student is engaged primarily in courses in the major, exclusive of thesis work. Two summer sessions of full-time work are equivalent to one quarter of residence.

Program. The study program of every student who is seeking a master's degree must be approved by the student's department. Two program plans are available to students. Plan 1 requires the completion of 30 units, including no fewer than 12 graduate units, and the submission of an acceptable thesis. Plan 2 requires 36 units, including no fewer than 18 graduate units, plus successful completion of comprehensive examinations.

Standards of scholarship. Only upper-division and graduate courses in which a student earns grades of A, B, C, or S may be counted in satisfaction of the unit requirements for a master's degree. In the case of courses specifically required for a program, a grade of A or B is required. Independent undergraduate studies (198/199 courses) will not apply to the degree. Students must maintain a cumulative grade-point average of at least 3.0 (B) to remain

in good standing in the Graduate Division at UCSB. Students with lower grade-point averages are subject to dismissal. On the academic department's recommendation, the graduate dean either places such students on academic probation or dismisses them from graduate status.

Changes in degree requirements. As research or new knowledge appears, requirements may change. Graduate students should be prepared to conform to any changes the department may require.

THE DOCTOR OF PHILOSOPHY DEGREE

Following are the Graduate Division's minimum requirements for the Doctor of Philosophy degree. Individual academic departments may impose additional requirements; students should consult the department for specific requirements that may be in excess of the minimum. If a student is admitted to a doctoral program with deficiencies in background or training, these deficiencies must be removed before admission to candidacy, usually during the first year of residence.

Academic residence. Students in doctoral programs must spend at least six regular academic quarters (not summer sessions) in residence on the UCSB campus pursuing a program of full-time study and research. Three consecutive quarters of this residence must be completed in regular session before advancement to candidacy.

Program. The doctorate is a research degree, granted on the recommendation of the student's doctoral committee. The Ph.D. is not a unit-count degree but is awarded upon demonstration of the student's academic excellence and research capability, usually by a dissertation.

Standards of scholarship. The rules governing scholarship for students in doctoral programs are the same as for the master's degree. In addition, students who cannot form a faculty committee to supervise their research, who fail departmental screening examinations, or who fail to develop a satisfactory dissertation proposal may be subject to dismissal from graduate standing for failure to make satisfactory progress toward the degree.

Candidacy. Advancement to candidacy for a Ph.D. is achieved

after satisfaction of all course requirements, residence requirements, passage of foreign language examinations as required by the program, passage of departmental preliminary and oral qualifying examinations, and payment of a \$25 fee. After advancement, candidates usually devote full time to preparation of a dissertation.

Normative time and the In-Candidacy Fee Offset Grant (ICFOG).

Normative time is the number of years considered to be reasonable for completion of a particular Ph.D. program by a full-time student. Normative time varies by department, from 4.5 to 8 years. It is measured from the time a student begins graduate study at any level. The *Graduate Division Announcement* contains a complete list of normative times and regulations governing registration. Students who have advanced to candidacy and have not exceeded the normative time for their degree are eligible for a grant equal to the educational fee while registered. Students register continuously for all regular quarter sessions until all their degree requirements are completed. In special cases, a graduate student may qualify for up to three quarters of approved leave of absence. Students who are neither registered nor on approved leave lose all status as students and must apply for readmission, and when applicable, for re-advancement to candidacy.

Dissertation. The doctoral dissertation must be an original work of research in the candidate's field of specialization. The candidate's doctoral committee determines the dissertation's acceptability.

Final requirements. Departments usually require an oral defense of the dissertation. The Graduate Council requires that dissertations be microfilmed by University Microfilms International to assure wide dissemination. The Graduate Council also requires Ph.D. candidates to participate in the Survey of Earned Doctorates, which provides nationwide information to the National Research Council on all doctoral recipients, their fields, their career plans, and other pertinent information.

Filing fee. Under certain circumstances, students may receive degrees without paying full fees for the quarter in which the degree program is completed. The filing fee, which is equal to half of the regular

registration fee, may be paid only in the quarter in which a student completes the degree. The filing fee privilege may be used only once. Consult the *Graduate Division Announcement* for further details about the filing fee.

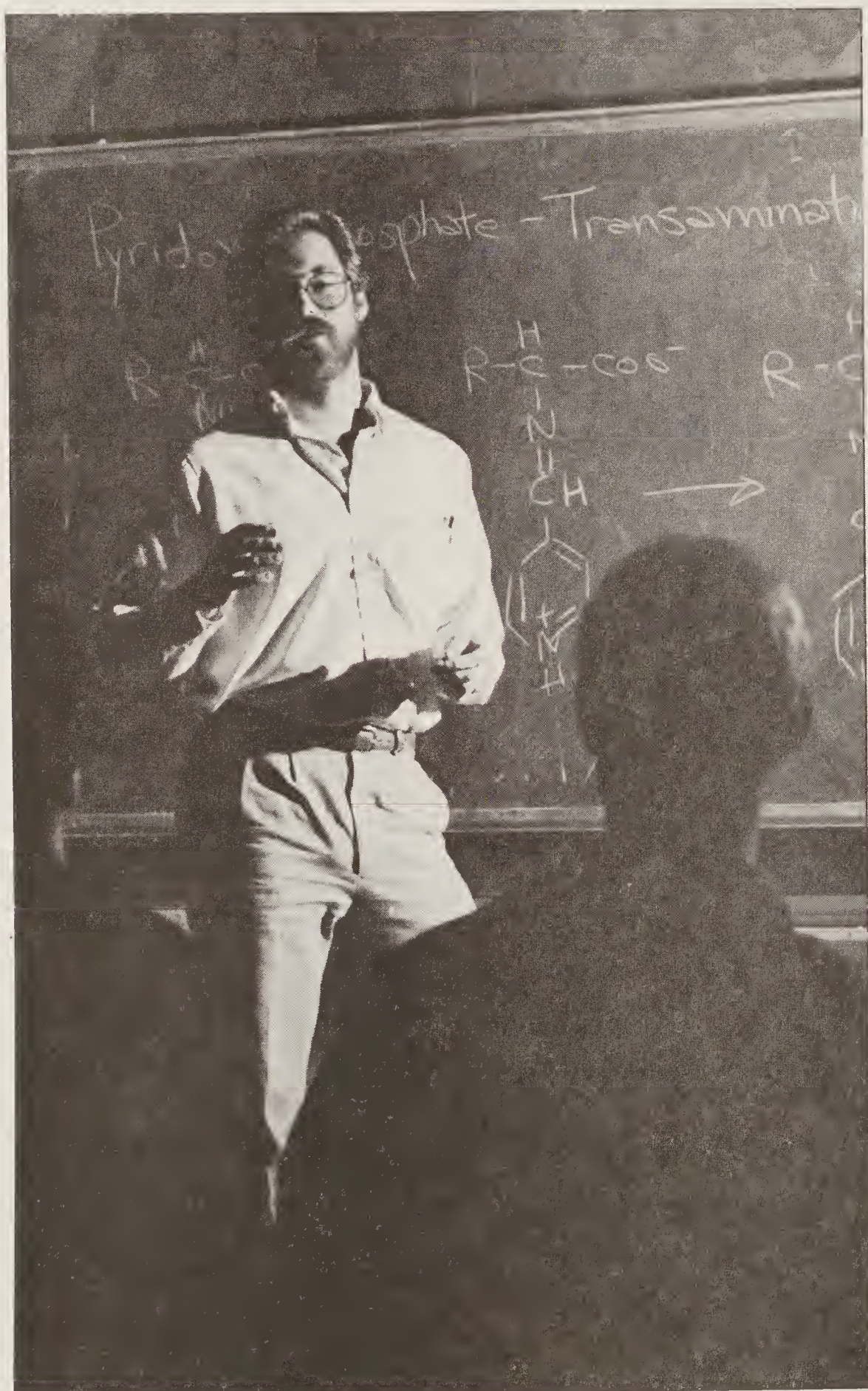
Changes in degree requirements.

As research or new knowledge appears, requirements may change. Graduate students should be prepared to conform to any changes the department may require.

GRADUATE STUDENTS ASSOCIATION

The Graduate Students Association (GSA), an organization composed of all UCSB graduate students, seeks to represent their views and interests. The GSA is governed by an executive committee that meets weekly and an elected council whose monthly meetings are open to all members.

The GSA appoints students to various university committees, issues publications, and schedules a variety of activities, such as new student orientations. All graduate students are assessed a fee of \$3.50 for the GSA. Further information is available from the GSA office, South Hall 1409 (telephone: 961-3824) or from departmental graduate secretaries.



Student Services and Activities



Majoring in communication studies has so far been a challenging and unique experience. As a junior, my research in the department has been brief but exciting. Up to this point my research has included studies of the effects of television on minority children and typecasting of black women in film from 1910 to 1970.

I have chosen rhetoric and mass communication for my emphasis. Rhetoric is a skill that I would encourage everyone to learn. Being able to express oneself well is necessary for almost all endeavors. Mass communication is significant in the world in which we live, because we are surrounded by it and its effects. After graduating, I hope to go on to graduate study and, ideally, a career that combines communication with my interests in education and black studies.

Like many other undergraduate students, it was the beauty of this campus that initially attracted me. I knew of no other school with a beachside view of blue and tranquil waters, palm trees, and its own lagoon. I then came to discover the excellent reputation of the Department of Communication Studies. Needless to say, I was convinced.

The environment here at UCSB is both stimulating and relaxing. This is perfect for promoting a balanced academic and social lifestyle.

Gayle Buford

Gayle Lynette Buford
Undergraduate, Class of 1988
Communication Studies major

Various services and activities are available to UCSB students, including academic counseling, personal counseling, career planning, health care, services to international students, services to disabled students, athletic and recreational activities, and numerous student organizations. Additional information about the services and activities described below may be obtained directly from the appropriate office.

STUDENT SERVICES

Orientation. New undergraduate students and their parents are encouraged to attend a one-and-a-half or two-day orientation program offered at various times during the summer in conjunction with the Colleges of Letters and Science, Engineering, and Creative Studies. Orientation participants have the opportunity to meet faculty, deans, and staff; to learn about student services, academic offerings, and registration procedures; and to select courses for the fall quarter. Participants stay in university residence halls and have meals in the dining commons. For new undergraduates not attending summer orientation, and for all new graduate students, orientation meetings are held during the week of pre-instructional activities at the beginning of each quarter. Details are available in the *Schedule of Classes*. Orientation Programs also offers a variety of activities each fall for new and returning students and for international students. The Orientation Programs office is located in Cheadle Hall 1124. Telephone: 961-3443.

Housing. Students at UCSB may choose their housing from university-owned campus residence halls, single and family student apartments, off-campus apartments, privately owned

residence halls, sorority and fraternity houses, and a housing cooperative. On-campus housing information is available from the Housing and Residential Services office, Residential Services Building 1501. Telephone: 961-2760. Off-campus housing information may be obtained from the Community Housing office, Building 434, Room 110. Telephone: 961-4371.

Application forms for university residence halls will be provided after a student's application for admission has been received. Housing in on-campus residence halls is determined by "random draw." Returning an application and a \$10 application fee will place a student's name in the draw; however, on-campus housing is not guaranteed. Students who cannot be accommodated on campus will be assisted by the Community Housing office in finding suitable off-campus housing.

Housing and Residential Services provides conference service in the summer for organizations with educational objectives. Information about conference facilities may be obtained from Conference Services, Residential Services Building 1501. Telephone: 961-3072.

Office of Residential Life. The Office of Residential Life, Trailer 335, assists students who live in the six on-campus residence halls and serves as a university liaison for students in the three off-campus, privately owned residence halls. Students may seek assistance, advice, and support from the professional staff on housing, academic, personal, and social development matters. The residential education program provides a quality living experience as well as opportunities to interact with faculty and staff within their living quarters. The program sponsors academic



Michelle Hoffman and son Justin lived in married student housing while Michelle and her husband Kyle completed their degrees. The university community includes a self-supporting all-day child care center for two- to five-year-old children of faculty, students, and staff.

classes, educational programming, interest halls, and the Resident Hall Association Student Government. Telephone: 961-2292.

Food services. Three dining commons are located on campus near the residence halls. Students who live on campus use a meal card to enter the dining commons of their choice. Students who live off campus may purchase meals in the campus dining commons, either on a per-meal basis, or through a quarterly contract. Contract arrangements may be made through the Food Services office, 1501 Residential Services Building. A cafeteria in the University Center is open weekdays from 7:30 a.m. until 4:00 p.m. A deli, coffeehouse, and several snack bars are located at various sites on campus.

Academic advising. Many sources of academic advising are available to students at UCSB. Each college provides advice to its students on matters such as major selection, program planning, academic difficulties, degree requirements, and petitions for exceptions to requirements. Undergraduate and graduate advisers are available in each major department to assist with decisions about majors, careers, and graduate schools.

Pre-professional advising is available in the College of Letters and Science for students considering careers in business administration, dentistry, law, nursing, physical therapy, speech therapy, and veterinary medicine. General information is also available to students interested in other professional areas such as architecture, journalism, and social work. A pre-health sciences adviser (telephone: 961-3201) offers special assistance to students who hope to attend professional school in the health sciences. The credential adviser in the Graduate School of Education, Phelps Hall 1190 (telephone: 961-2036), holds weekly meetings to acquaint students with the teaching credential program at UCSB.

Tutorial Center. The Tutorial Center provides individual and group tutoring in all academic disciplines. Services are free to eligible undergraduate students, including EOP participants, freshmen on probation, and special action students. Private tutoring is available for registered students who are not otherwise eligible for the center's services. The center is open weekdays from 8 a.m. to 5 p.m., and is located in Building 477 in the Student Services Complex area. Telephone: 961-3269.

Center for Academic Skills Enrichment. The Center for Academic Skills Enrichment (CASE), Building 427, offers workshops for all registered students in critical reading, writing, and study skills. Workshops also cover such subjects as test preparation, time management, and writing strategies. CASE develops study-skill groups in conjunction with specific courses, helps seniors compose statements of purpose for application to graduate school, and helps students prepare for examinations, including the GRE, GMAT, and CBEST. CASE is open on a drop-in basis for students wishing consultation or handouts about learning skills. Telephone: 961-4248.

Office of the Dean of Students. The Dean of Students Office, Cheadle Hall 1005, provides a centralized office for a variety of student needs. Services include general assistance in solving student-related problems, verification of eligibility for "good student" automobile-insurance discounts, and assistance in obtaining excused absences from class because of medical or other reasons. The office is also responsible for providing education about and enforcement of campus regulations. Questions about academically related misconduct, as well as other violations of campus regulations, may be addressed to this office. Telephone: 961-4569.

Services to disabled students. The Special Services Program (SSP), South Hall 1417, assists students with temporary or permanent physical disabilities who have special needs related to campus life and the completion of a university degree program. The SSP provides interpreters, note takers, readers, mobility assistance, advising, and referral. An extensive inventory of adaptive equipment is available for use by eligible students. Telephone: 961-2668, V/TDD.

Educational Opportunity Program/ Student Affirmative Action. The Educational Opportunity Program/ Student Affirmative Action (EOP/SAA) central offices are located in Building 434, Room 125. The programs are designed to inform, recruit, and support low-income and/or underrepresented ethnic minority high school and community college students wishing to attend UCSB. Support services include pre-admission counseling, tutoring, housing assistance, a residential



Sorority houses like Delta Gamma are just one setting for undergraduate living. Other options include dormitory- and suite-style residence halls, a student-run cooperative, university-owned apartments for married students and students with children, and rental apartments and houses in neighboring Isla Vista, Goleta, and Santa Barbara.

summer transition program for freshmen, and career and graduate school advising. Telephone: 961-3235.

Peer services. Many students at UCSB provide services to fellow students in exchange for work experience and either academic credit or a stipend. Peer service opportunities include work as resident assistants and housing advisers, counseling and career peers, peer health educators, veterans' affairs advisers, and academic peer advisers in the College of Letters and Science. Additional opportunities exist in the Community Service Organization, a civilian extension of the campus police department; the EOP/SAA office; the Women's Center; orientation programs; and the rescue team.

Veteran and ROTC counseling. The Veterans' Support Services office assists veterans before and after admission to the university and includes a group of peer counselors who work with fellow veterans. Tutorial assistance, work-study positions, employment counseling, and a loan fund are also available. Telephone: 961-3935.

Counseling and Career Services. Counseling and Career Services helps

students achieve their personal, social, academic, and career goals. The confidential services, provided by professionals (or peers when appropriate), are free to all registered students. Counseling services include individual counseling, groups and workshops, minority counseling, behavioral self-help, and crisis counseling.

Career Planning Services offers career counseling, career testing, career groups and workshops, and information about careers and graduate and professional schools and programs through Career Resources.

The Career Employment Service advises students about work opportunities; provides information about resume writing, interview techniques, and job search strategies; coordinates on-campus interviews with employer representatives, and assists advanced degree and credential candidates in education through the Educational Reference Service. Career-related internships and part-time and seasonal job placements are coordinated through the Applied Learning Program. All services are located in Building 599. Telephone: 961-4411.

Student Health Service. Certain short-term health care services are covered by payment of the quarterly registration fee and are available from Student Health Service, Building 588. These include: (1) nurse and physician consultation in general and internal medicine, orthopedics, dermatology, gynecology, and psychiatry; (2) medications and dressings administered by nurse or physician; (3) laboratory tests and X-rays, as ordered by staff physicians; (4) physical therapy procedures; and (5) birth control counseling. Other health services, such as antigen injections, prescriptions, vision and dental care, and birth control devices, are available at additional charge. The university sponsors a supplemental accident and sickness insurance plan. New students automatically receive information about purchasing this plan, which international students are required to purchase. Telephone: 961-3371.

Speech and Hearing Center. The Speech and Hearing Center, Snidecor Hall 1693, is open to students with speech, language, or hearing disorders. The center is staffed by professionally certified speech pathologists and audiologists and by student clinicians. Evaluation and appropriate treatment are provided for a nominal fee. Telephone: 961-2148.

Women's Center. Serving students, staff, faculty, and the community, the Women's Center offers lectures, workshops, and films for men and women. Services include educational projects on rape prevention and sexual harassment, an extensive library, and an art gallery. The center's focus is to promote understanding and to challenge inequities in the lives of men and women through education, research, and advocacy. The center is located in Building 434. Telephone: 961-3778.

Child care. The University Children's Center on the west campus provides day care and pre-school activities for the two- to five-year-old children of students, faculty, staff, and community residents. The center is a self-supporting operation; fees are charged for its services. Telephone: 961-3665.

Office of International Students and Scholars. The Office of International Students and Scholars, Building 434, provides academic and personal counseling and assistance to

international students. Every nonimmigrant student is required to report to the office; students should bring passports and visa documents with them. The office conducts an orientation program at the beginning of the fall quarter and provides information about financial aid, part-time employment, and university admission and language requirements. Telephone: 961-2929.

Office of the Ombudsman. The campus ombudsmen, Room 201 in Building 427, serve as trouble-shooters for students, faculty, and administrative staff members whose problems have not been resolved by other agencies. Telephone: 961-3285.

Student grievance procedures. UCSB is in compliance with all legislation that seeks to eliminate discrimination toward students on the basis of race, color, national origin, religion, handicap, sex, sexual orientation, or age. (Sexual harassment is considered to be a form of sex discrimination.) Students who wish to file a grievance arising from alleged discrimination must do so at the Office of the Vice Chancellor—Student and Community Affairs, Cheadle Hall 5203. An outline of formal student grievance procedures is contained in the Appendix.

STUDENT ACTIVITIES

UCSB students have the opportunity to participate in any of 250 student organizations. A complete list of all organizations is available in the Activities Planning Center, located on the third floor of the University Center (UCen). Some of the opportunities available to students are described below.

University Center (UCen). The UCen is the focal point for student activities on the UCSB campus. It is the headquarters of the Associated Students and the Activities Planning Center. The UCen houses the UCSB Bookstore, UCen Food Services, a barber shop, an art gallery, a professional travel agency, meeting and conference rooms, check-cashing services, and a U.S. post office.

Activities Planning Center. The Activities Planning Center, located on the third floor of the UCen, plans and schedules student activities and provides a daily tape of all activities on campus; telephone: 961-2377. It



Pre-med student Keith Caramelli observes as pediatrician Dr. Laurence Mansbach of the Santa Barbara Medical Foundation Clinic examines a young patient. This informal internship, called a preceptorship, is part of the course work for Biology 191, "Introduction to Health Care Delivery."

also provides developmental workshops designed to assist student participation in co-curricular activities. Staff members of the center serve as advisers to the Associated Students, to sororities and fraternities, to the Program Board, and to the Community Affairs Board. Telephone: 961-2099.

Associated Students. All undergraduates, through payment of the student fee, are members of the Associated Students (A.S.). The A.S. office is located on the third floor of the UCen. The Legislative Council governs and administers the budget of the A.S. through a network of internal student committees. Officers of the Legislative Council are elected annually by the undergraduate student body.

The A.S. partially subsidizes the A.S. Bike Shop, A.S. Legal Service, A.S. Notetaking Service, and A.S. Program Board. Also supported in part by the A.S. are campus media, including a newspaper, the yearbook, and a radio station.

The Associated Students offers many opportunities for student participation in university government and acts as a political advocate for various campus, local, and statewide issues of student concern. All A.S. members are entitled to participate in A.S. affairs and activities. Membership also includes free or reduced admission fees to UCSB concerts, and athletic, social, and other events. Telephone: 961-2566.

Residence Halls Association. The Residence Halls Association, Trailer 335, coordinates social, recreational and cultural activities for students living in university-owned residence halls. Telephone: 961-2292.

Fraternities and sororities. There are 12 fraternities and 12 sororities at UCSB. They own or lease houses or apartments near the campus and provide lodging and meals for their members. For information regarding membership, call the Activities Planning Center. Telephone: 961-2099.

Student media. UCSB student publications include a student newspaper, the *Daily Nexus*; a yearbook, *La Cumbre*; a literary magazine, *Spectrum*; a journal of undergraduate research, *Discovery*; and a journal of graduate research, *Thresholds*. UCSB also has an AM-FM radio station, KCSB. Further information about student media is available in the Storke Publications Building and in the Associated Students office.

Community service projects. Through the A.S. Community Affairs Board, students may volunteer their services to schools, legal services, prisons, clinics, senior citizen residences, and to other local human and social service agencies. Telephone: 961-4296.

Intercollegiate athletics. The intercollegiate athletics program at UCSB offers 11 varsity sports for men (cross-country running, water polo, soccer, basketball, swimming and

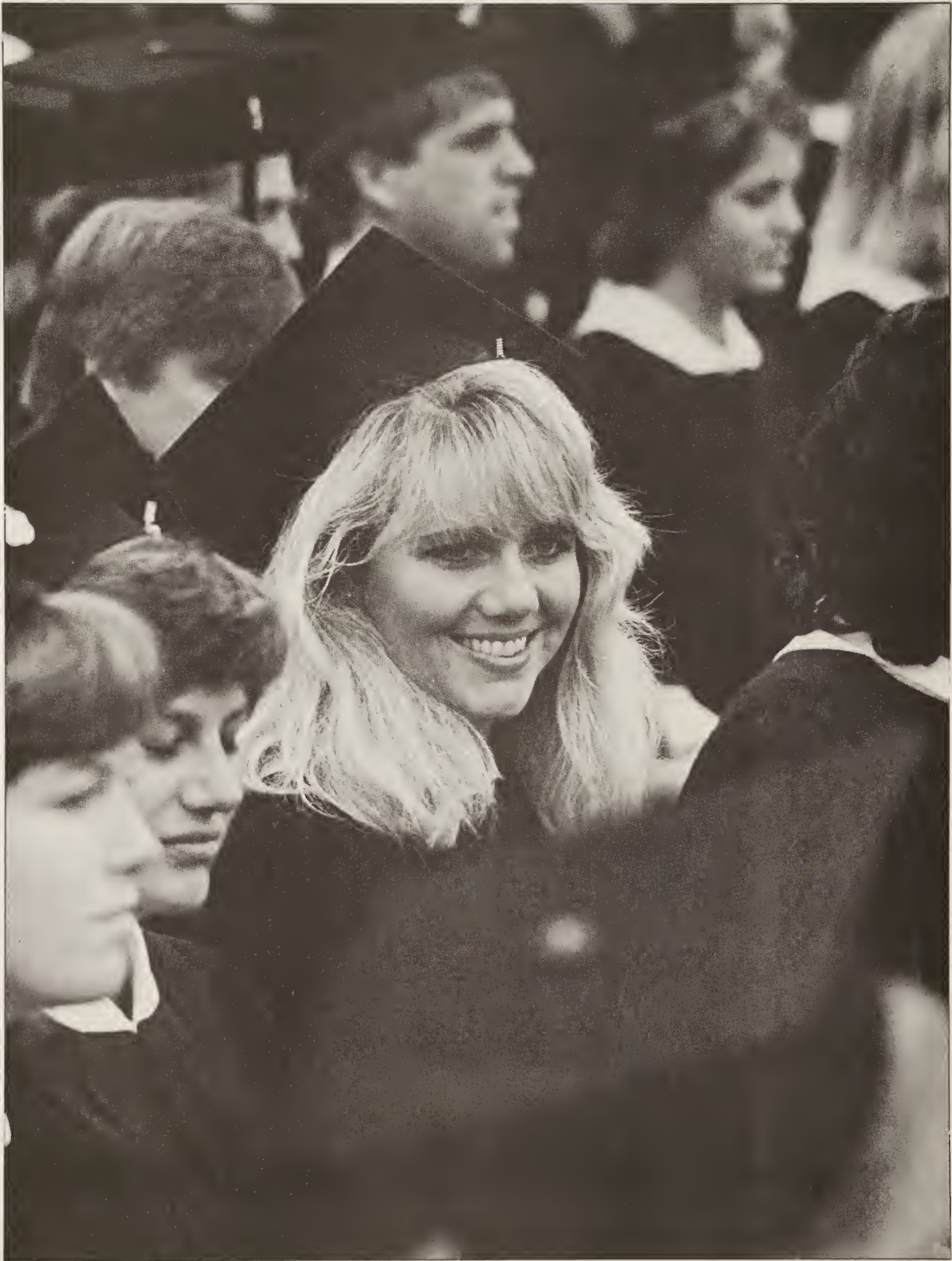
diving, track and field, baseball, golf, and tennis) and eight for women (tennis, volleyball, swimming and diving, track, gymnastics, cross-country running, softball, and basketball). All men's varsity teams compete in the National Collegiate Athletic Association, Division I. All women's teams compete in Division I except for gymnastics, which is Division II. Telephone: 961-3400.

Alumni Association. Graduates and other former UCSB students are eligible for membership in the Alumni Association, which seeks to retain and develop for the university the interest and involvement of former

students of UCSB and its predecessor institutions. The association sponsors regional alumni clubs; faculty, student, and alumni awards; the Student Alumni Association; a summer family vacation center; scholarships and interest-free student loans; *Coastlines* magazine; and other programs. The office is located in Cheadle Hall 1325. Telephone: 961-2288.

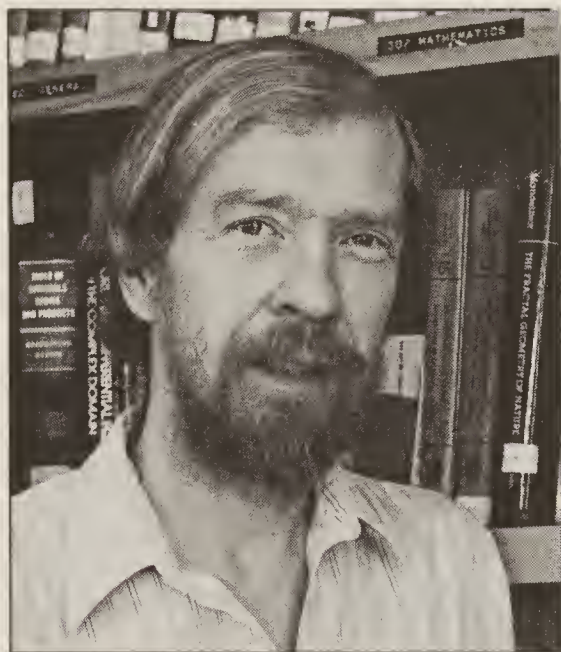
Physical Activities and Recreation. The Department of Physical Activities and Recreation maintains a year-round program of sports activities, including wheelchair events. Recreation offers a campus swimming pool, two gymnasiums, a

gymnastics area, a weight room, a photography laboratory, a Nautilus training facility, a wellness institute, and recreational sailing. An outdoor program offers instruction in canoeing, scuba diving, mountaineering, skiing, backpacking, boating, and camping. Many areas of the recreation department, including the swimming pool and weight room, have been expanded to meet the needs of students with disabilities. Each quarter, Recreation publishes *Leisure Review*, which contains listings of intramural, recreational, leisure, and intercollegiate activities. Telephone: 961-2181.



Fees, Expenses, and Financial Aid

Billing Office, Cheadle Hall 1311; Telephone (805) 961-2155
Office of Financial Aid, South Hall 1607; Telephone (805) 961-2432



I am an astrophysicist. I study the theory of black holes, neutron stars, quasars, and the origin of the universe itself. The laws of physics we discover on Earth can explain most of these things. We may now, however, be entering an exciting era when new physical laws may be discovered from astronomical observations, just as Isaac Newton once discovered the law of gravity by musing on a falling apple and the motions of the moon.

The Institute for Theoretical Physics, where I do research, was founded at UCSB after a spirited national competition involving a number of top universities. It is a center for visiting physicists from all over the United States and the world. I get the benefit of intellectual stimulation from both the UCSB physics faculty and from these visitors.

The incoming graduate students at UCSB already know how to do well in classroom work — that is why they are here — but it is our job to teach them how to do scientific research. Research is different from classroom work, as different as composing music is from playing music. It can be quite frustrating. But then the sudden breakthrough of understanding can be intensely satisfying, and it is great to share this experience with our students.

Douglas M. Eardley

Douglas M. Eardley
Professor
Department of Physics
Permanent Member
Institute for Theoretical Physics

The exact cost of attending the University of California, Santa Barbara will vary. Generally, however, the total undergraduate expenses for three quarters on campus will average \$7,800 for residents of California and \$12,600 for nonresidents, including international students. Total graduate student expenses, including books and supplies, are estimated at \$10,700 for residents of California and \$15,100 for nonresidents. Personal expenses will be approximately \$1,785.

The university's accounts receivable billing system, known as Billing, Accounts Receivable, and Collections (BARC), consolidates any debts owed to the university, including fees, housing expenses, and library fines. Students receive a monthly statement of their account status whenever they have financial obligations to the university. Fee payment deadlines are published quarterly in the *Schedule of Classes*. Newly admitted students are notified of deadlines each quarter.

Qualified students are eligible for financial assistance in the form of scholarships, loans, grants, and/or work-study.

FEES AND EXPENSES

Application fee. Every applicant for admission must submit a nonrefundable \$35 fee with the application.

◀ Before coming to UCSB in 1983, Dr. Eardley was a research fellow at the California Institute of Technology and associate professor at Harvard and Yale. Currently an advisor to government agencies on technical aspects of national security and public policy, he has served on several committees of the National Academy of Sciences, including the Committee on the Atmospheric Effects of Nuclear Explosions and the Panel on Gravitation and Cosmology. His most recent publications include papers on black holes, gravitational waves, and other topics in gravitation and astrophysics.

Deposit fee. A nonrefundable \$50 deposit (\$100 deposit effective fall, 1988) is required of undergraduates when they return the Statement of Intent to Register at UCSB. The deposit will be applied to the registration fee only if students enroll in the quarter for which they have been admitted.

Registration fee. The registration fee is the same for both undergraduate and graduate students. This fee covers such student expenses as athletic facilities, laboratory fees, outpatient care furnished by the Student Health Service, and counseling and placement services. This fee is charged whether or not students use these services.

Educational fee. The educational fee is paid by all students registered at UCSB to cover a variety of educational costs as determined by the regents. Students with demonstrated financial need may receive a grant through the University Student Aid Program (USAP), funded through educational fee revenues. Students interested in the USAP must complete a Student Aid Application for California (SAAC).

With the approval of the appropriate college dean, undergraduate students may obtain deficit load (or part-time) status prior to the beginning of the quarter. Approval is based upon verifiable reasons of employment, health, or family responsibility. Students enrolled in 10 or fewer units who have obtained deficit load approval prior to the beginning of the quarter may be eligible for a 50-percent reduction of the educational fee.

Associated Students fee. The Associated Students membership fee is \$18 a quarter and is paid by

undergraduates at the time of enrollment.

Graduate Students Association fee. All graduate students are assessed a fee of \$3.50 a quarter for the Graduate Students Association.

University Center building fee. All students are assessed a University Center (UCen) fee of \$6 a quarter, used to repay construction loans. Students enrolled in 5.5 units or fewer are eligible for a full refund of this fee.

Transit systems fee. The transit systems fee provides unlimited local Metropolitan Transit District (MTD) bus service for all registered students.

CalPIRG fee (refundable). The California Public Interest Research Group (CalPIRG) is a non-profit, non-partisan, student-directed organization working on behalf of consumers and the environment of California. This fee may be waived upon request at the CalPIRG office, trailers 306B and 306C, office hours 9:00 a.m. to 5:00 p.m.

Nonresident tuition fee. Students who have not been legal residents of California for the established time period are classified as nonresidents and are subject to payment of a nonresident tuition fee of \$1,430 a quarter. Regulations governing determination of residency are outlined in the Appendix. Newly admitted and returning students are required to file a Statement of Legal Residence. Questions concerning residency classification may be referred to the deputy of the Attorney in Residence Matters in the Office of the Registrar.

Accident and sickness insurance plan (Optional). UCSB sponsors an accident and sickness insurance plan, which offers certain medical services not provided by the Student Health Service. It also provides medical protection outside the Santa Barbara area. It is highly recommended that students not covered by a private policy purchase this plan as added medical protection. All nonimmigrant international students, regardless of other health insurance they may have, are required to participate in this plan. Further information is available from the Student Insurance Counseling Office, Student Health Service, Building 588. Telephone: 961-2592.

Summary of Quarterly Fees and Expenses

The following fees are proposed as of the publication deadline for this catalog. They are subject to revision, including retroactive revision during the academic year, without notice by the Regents of the University of California or by action of the California legislature.

	Undergraduate Students	Graduate Students
Registration fee	\$188	\$188
Educational fee	\$268	\$268
Associated Students fee	\$18	—
Graduate Students Association fee	—	\$3.50
University Center fee	\$6	\$6
Transit fee	\$5	\$5
CalPIRG fee (refundable)	\$3	\$3
Total for California residents	\$488	\$473.50
Tuition for nonresidents	\$1,430	\$1,430
Total for nonresidents	\$1,918	\$1,903.50
Optional: Student Accident and Sickness Insurance fee		
Full year (12 months)	\$227	\$227
Winter and spring only	\$169	\$169
Spring only	\$121	\$121

Additional Fees

Intercampus transfer fee. Undergraduate students who wish to transfer from one UC campus to another must pay \$35 with their intercampus transfer application.

Readmission fee. A fee of \$35 is required when submitting an application for readmission.

Parking fees. All vehicles must be registered with the Parking Services Office, located across from Harder Stadium. Students who live within one mile of the campus boundary are not eligible for parking permits for automobiles or motorcycles. Parking for on-campus residents is limited and awarded by lottery. Complete information about parking and vehicle operation may be obtained from Parking Services. Telephone (805) 961-2346. Note: Fees are subject to revision without notice. A table of current parking fees follows.

Parking Fees 1987-88	
Automobile.....	\$144 a year \$38 a quarter \$2 a day
Motorcycle	\$24 a year \$1 a day

REFUNDS

A full refund of fees may be granted to students who withdraw prior to the first day of instruction, and partial fees may be refunded to students who withdraw before the beginning of the sixth week of classes. Information about refunds, and about fees and deposits, is available in the brochure *University of California Student Fees and Deposits*, available from the Office of the Registrar.

Schedule of Refunds				
1-14 days	15-21 days	22-28 days	29-35 days	36 days or more
80%	60%	40%	20%	0%

FINANCIAL AID

Although students and their parents are expected to make the maximum effort to cover college expenses, many financial aid programs exist to supplement students' resources. More than 10,000 UCSB students received more than \$50 million in financial aid from all sources in 1986-87. Funds are made available by the federal government, the State of California, the Board of Regents of the University of California, and various private organizations, corporations, and donors.

Applicants may apply for financial aid before they learn their admission status. An offer of financial assistance is sent only to students who have been admitted to the university. Students must be U.S. citizens or permanent residents of the U.S. to apply. Aid recipients must be enrolled at least half-time as regular students in eligible programs and make satisfactory academic progress in their course of study. Priority for funds administered by UCSB is given to full-time students.

Applications for traditional need-based aid require the completion of the Student Aid Application for California (SAAC), available from the UCSB Office of Financial Aid, as well as from local high schools and colleges. The 1988-89 SAAC should

be available in December 1987. The SAAC, when submitted to the College Scholarship Service, entitles qualified students to be considered for awards from the California Student Aid Commission (CSAC), the UCSB Office of Financial Aid, and the federal Pell Grant Program.

UCSB need-based awards are usually announced in April and take the form of a "package" of aid consisting of scholarship, grant, loan, and work-study, according to the financial need of the applicant and monies available.

Awards may be adjusted at any time upon notice of aid not taken into account when the original UCSB award package was determined. Awards may also be increased during the year for a variety of reasons, depending on availability of funds.

The Office of Financial Aid publishes a brochure that describes the available aid programs and provides information on the principal processes and procedures of financial aid administration at UCSB.

The brochure may be obtained by writing or visiting the Office of Financial Aid, South Hall 1607.

Preferred filing dates. The priority filing deadline for the academic year 1988-89 for need-based UCSB aid is March 15, 1988. However, applicants for programs of the California Student Aid Commission may anticipate a filing deadline in early February 1988. The deadline for UCSB scholarships, including the Regents' Scholarship Program, is November 30, 1987.





COLLEGES AND SCHOOLS

Departments, Programs, Courses

The following section of this catalog contains: (1) information about the offerings and requirements of the colleges and their individual departments; (2) faculty lists; and (3) course lists. The overall organization is alphabetical by university academic unit (College of Creative Studies, College of Engineering, College of Letters and Science, Graduate School of Education), and alphabetical by department within each academic unit, as indicated in the Table of Contents. Students should read the chapter about their college as well as the entries related to departments of interest.

Because the catalog must be prepared in advance of the academic year it covers, it may not reflect very recent changes in courses, requirements, or faculty. The *Schedule of Classes*, available in the UCSB Bookstore before the opening of each new quarter, contains current information about class offerings and instructors and indicates when and where courses are offered. Students who want to plan their schedules before the *Schedule of Classes* is available should talk with individual departments to determine when particular courses will be offered.

Several important matters should be noted:

- Faculty members are occasionally on leave. Department offices are the best source of information about the leave status of faculty members.
- Prerequisites for courses should be noted carefully; a course has no prerequisite unless so designated.
- Some courses are not offered every year; consult the *Schedule of Classes* or the department for authoritative information.

- Admission to UCSB does not guarantee enrollment in any particular class.

Course numbers are assigned as follows:

1-99. Lower-division courses, open to all UCSB students; especially appropriate for freshman and sophomore students; may not be taken for upper-division or graduate credit.

100-199. Upper-division courses, ordinarily open to students who have satisfied the prerequisites specified in catalog descriptions of these courses. Prerequisites may include appropriate prior college-level courses or their transfer equivalents, completion of six terms of college work, or a combination of six terms of college work and appropriate prior college courses. Generally, upper-division courses are not recommended for freshman-standing students. No graduate course credit is allowed for upper-division courses even if additional work is completed, but a limited number of upper-division courses may be applied in fulfillment of graduate degree requirements. Students in the College of Letters and Science should review the Letters and Science List of Courses to determine if an upper-division course is applicable to the college's 60 upper-division unit requirement.

198-199. Independent studies courses, open to students who (1) have attained upper-division standing; (2) have at least a 3.0 grade-point average for the preceding three quarters; (3) can demonstrate appropriate academic background; and (4) have obtained necessary approvals as outlined in the *Schedule of Classes*.

200-299. Graduate courses, ordinarily open only to graduate students who have completed at least 12 upper-division units related to the subject matter of the course.

Exceptionally qualified undergraduates, with at least 12 units in the subject and a cumulative grade-point average of 3.0 or higher, may petition to enroll in graduate courses and must do so prior to registration.

300-399. Courses designed for a professional sequence in approved credential programs in the Graduate School of Education.

400-499. Courses devoted to the techniques and practices of translation and interpretation from and to a foreign language; normally not applicable to graduate degree requirements.

500-599. Courses reserved for advanced study and research; not open to undergraduates.

How to read course listings:

Each course listing contains the course number, course title, number of units of credit, name of instructor, prerequisites if any, and course description. A course in which the instructor is listed as *Staff* may be offered by various instructors.

One or more codes (F, W, S, SS) may appear at the end of a course entry, indicating whether the course will be offered in the fall, winter, or spring quarter, or in summer session.

Course numbers suffixed with the letter L are usually laboratory courses.

College of Creative Studies

College of Creative Studies, Building 494; Telephone (805) 961-2364
Provost: Max Weiss



The scientist is a careful observer; so is the artist. One need not be trained in either of these disciplines to observe that we, as the dominant species, are desperately engaged in a race between self-discovery and self-destruction. Something is being demanded of us that is without precedent. The task of deep understanding about the fragile relationship between all life and things may simply prove to be beyond us. We can die, mired in our sacred dogmas, carefully guarded analytical perspectives, and fractured, particularized perceptions.

I choose to believe that we are capable of learning to value inclusive rather than exclusive understanding. I further believe that artists have a moral, intellectual, and spiritual responsibility to contribute to this understanding, that is, to be leaders in self-discovery. Increasingly, it grows more apparent that we humans are the unknown. The race is happening every day, at all moments, in each of us. What we are, we put out into the world.

My research, my work, is addressed to this task. It is a search of the deep intimate places of the psyche where this race, begins — close to Nature, at the edges where illusions originate. Nothing the human mind conceives is unreal.

I try to teach something of what I understand of this to my students, interweaving and urging discovery of their own independent processes of growth and evolution while we study the necessary techniques of drawing, color, painting, building, conceiving, and perceiving and how they may or may not communicate meaning to others.

Cheryl Bowers
Professor
Department of Art Studio

The College of Creative Studies at UCSB is unique in the University of California. Students are enrolled on evidence of talent for advanced and independent work in an art or a science. The aim of the college is to instruct these students by all the means available to a faculty of artists and scholars whose interest is to work closely with talented undergraduates. There are no lecture classes in the college, only tutorials and seminars.

Work in the college leads to the Bachelor of Arts degree in art (painting or sculpture), biology, chemistry, literature, mathematics, music theory and composition, or physics; and to the Bachelor of Science degree in chemistry, mathematics, or physics.

The college publishes the annual *College of Creative Studies Announcement*, containing important information for students. It may be obtained, along with any further information about the college, from the college office.

ADMISSION

Candidates for the college must meet the entrance requirements of the University of California. Before a final decision regarding an applicant's enrollment in the College of Creative Studies will be made, a letter of application and a transcript of the applicant's scholastic record must be received by the college. Candidates in the arts will submit work in evidence of talent; work in evidence is helpful but

not essential for candidates in mathematics and the sciences. In the arts, the evidence will be fiction, poems, paintings, sculpture, musical compositions, or critical papers; in the sciences, examples of independent research and other evidence of an exceptional capacity for intellectual pursuit, discovery, and reformulation.

Transfer. Students may apply at any time for transfer into another academic unit of the university with appropriate credit granted for their standing in the college. Those applying for transfer to the college, if accepted, will be enrolled at the equivalent College of Creative Studies level. Students are normally expected to spend at least six quarters enrolled in the college to receive a degree from the College of Creative Studies.

GRADING AND UNIT REQUIREMENTS

The grading system in the college is focused on accomplishment. It is a combination of pass/no record and variable-unit credit. A pass in a college course is given only for work completed at above-average (3.0 or higher) level. For each course in the college, the student may receive any number of units from zero to six. Zero (0) is no record — the course is not recorded on the student's transcript; any number of units from one to six is pass. In each course the student enrolls for the specific number of units of work (up to a maximum of six units) planned during the quarter, but at the end of the quarter the instructor makes the final determination of the unit value of the student's work in the course.

Courses taken outside the College of Creative Studies will be graded according to the grading system of the college in which the courses were

◀ Professor Bowers's art work has been exhibited in many galleries, both locally and in New York, San Francisco, and London. Her work has been reviewed as ranking "with California's best." Some of her prints and paintings are owned by major museums, including the National Gallery in Washington, the San Francisco Museum of Modern Art, and the Metropolitan Museum of Art.

taken. Students must maintain a 2.0 grade-point average in courses taken for letter grades outside the College of Creative Studies.

Each unit of credit earned is counted toward graduation; 180 quarter-units of credit qualify the student to be evaluated for graduation with a Bachelor of Arts degree or a Bachelor of Science degree in chemistry, mathematics, or physics in the College of Creative Studies.

COURSE REQUIREMENTS

There are no specific required courses. However, in addition to completing a major under the supervision of their advisers, students are required to complete two courses in any field or fields related to the major, and eight courses in any field or fields not related to the major. These courses may be taken in the College of Creative Studies or in departments of the College of Letters and Science.

All College of Creative Studies courses, except General Studies, are considered upper division. The only prerequisite for enrollment in any course is the instructor's approval. Because Creative Studies course offerings are not published in the quarterly *Schedule of Classes*, students should contact the college office for registration details.

Students in the college work closely with their advisers. A student's program must be approved by an adviser and signed by the provost or the associate provost before it can be filed with the Office of the Registrar.

Faculty

Steven Allaback, Ph.D., University of Toronto, Professor (*literature*)
 Donald Aue, Ph.D., Cornell University, Associate Professor (*organic chemistry*)
 Steven Cortright, M.A., Stanford University, Professor (*art*)
 Ellis Englesberg, Ph.D., UC Berkeley, Professor (*biology*)
 Peter Fricker, F.R.C.O., Royal College of Organists, London, Professor (*music*)
 J. Thomas C. Gerig, Ph.D., Brown University, Professor (*bio-organic chemistry*)
 Stephen P. Hartke, Ph.D., UC Santa Barbara, Lecturer (*music*)
 Hank Pitcher, Lecturer (*art*)
 John Ridland, Ph.D., Claremont Graduate School, Professor (*literature*)
 Francesc Roig, Ph.D., University of Massachusetts, Lecturer (*physics*)
 Ian Ross, Ph.D., McGill University, Professor (*cell biology, mycology*)
 Charles Ryavec, Ph.D., University of Michigan, Lecturer (*mathematics*)
 Max Schott, M.A., UC Santa Barbara, Lecturer (*literature*)
 Logan Speirs, M.A., Cambridge University, Associate Professor (*literature*)

Alan Stephens, Ph.D., University of Missouri, Professor (*literature*)
 Richard J. Watts, Ph.D., University of Colorado, Professor (*inorganic chemistry*)
 Max Weiss, Ph.D., University of Washington, Professor (*mathematics*)
 Adrian Wenner, Ph.D., University of Michigan, Professor (*biology*)

CREATIVE STUDIES COURSES

The following list consists of the kinds of courses offered in the college. Art CS 1, for instance, is "Drawing and Painting." In any quarter there might be as many as 20 sections, each a different course—e.g., "Abstract Painting," "Figure Drawing," etc. Since these courses are arranged and scheduled after the Schedule of Classes has been printed, interested students should inquire about CCS courses a few weeks before the beginning of each quarter. Further information, including detailed descriptions of courses, is available at the College of Creative Studies office.

GENERAL STUDIES

CS 10. Group Interdisciplinary Studies

(1-6) Staff
 Group studies in an interdisciplinary area, supervised by a member of the faculty of the College of Creative Studies.

ART

CS 1. Drawing and Painting

(1-6) Staff
Prerequisite: consent of instructor.
 Emphasis on the practice and development of making paintings and drawings.

CS 2. Themes

(1-6) Staff
 Drawing and painting in sequences, and according to themes.

CS 3. Murals

(1-6) Staff
Prerequisite: consent of instructor.
 Emphasis on the practice and development of making murals.

CS 4. Prints

(1-6) Staff
Prerequisite: consent of instructor.
 Emphasis on practice in graphic media (e.g., etching); various methods and materials utilized will be determined by particular faculty interest. Classical graphic media (e.g., etching and lithography) and modern technological media (e.g., photo-engraving and offset-lithography).

CS 5. Book Arts

(1-6) Staff
Prerequisite: consent of instructor.
 The study and practice of typography; letterpress printing; both traditional and experimental uses of the printing press; and the book arts.

CS 6. Art Symposium

(1-6) Staff
Prerequisite: consent of instructor.
 A continuing series of lectures and presentations by artists and professionals closely associated with the arts.

CS 10. Graphic Study of the History of Graphic Ideas: Drawing

(1-6) Staff
Prerequisite: consent of instructor.
 The surviving works of art from the Paleolithic period until now constitute an existing order that

may be considered the proper material for study by aspiring draughtsmen and painters. Art CS 10 emphasizes drawing.

Prerequisite: consent of instructor.

CS 11. Graphic Study of the History of Graphic Ideas: Painting

(1-6) Staff
Prerequisite: consent of instructor.
 The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art CS 11 emphasizes painting.

CS 15. Art Colloquium

(1-6) Staff
Prerequisite: consent of instructor.
 Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 20. Sculpture

(1-6) Staff
Prerequisite: consent of instructor.
 Practice in the design and development of making a sculpture using various materials as determined by particular faculty interest.

CS 50. Elements of Filmmaking

(1-6) Staff
Prerequisite: consent of instructor.
 Practice in theory and technique of filmmaking or video. Students will learn to use the basic equipment, and will make films or videos both individually and in collaboration. Medium utilized will be determined by particular faculty interest.

BIOLOGY

CS 1. Models and Experiments

(1-6) Staff
Prerequisite: consent of instructor.
 Interplay between models and experimentation in the development of an understanding of the principles of biology.

CS 2. Laboratory Project

(1-6) Staff
Prerequisite: consent of instructor.
 Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3. Reading Project

(1-6) Staff
Prerequisite: consent of instructor.
 Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 10. Biology Colloquium

(1-6) Staff
Prerequisite: consent of instructor.
 Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CHEMISTRY

CS 1. Major Unsolved Problems

(1-6) Staff
Prerequisite: consent of instructor.
 Study of some of the major unsolved problems in chemistry, with the aim of developing general experimental and theoretical approaches to these problems.

CS 2. Project

(1-6) Staff

Prerequisite: consent of instructor.

Investigation of a specific problem in chemistry, set up in consultation with the instructor, and concluding with the student's report of progress.

CS 3. Seminar

(1-6) Staff

Prerequisite: consent of instructor.

Presentation and critical discussion of reports on original projects.

CS 4. General Chemistry Seminar

(1-6) Staff

Prerequisite: consent of instructor.

Accelerated course in general chemistry.

CS 5. Physical Chemistry Seminar

(1-6) Staff

Prerequisite: consent of instructor.

Accelerated course in elementary physical chemistry.

CS 6. Organic Chemistry

(1-6) Staff

Prerequisite: consent of instructor.

Accelerated course in elementary organic chemistry.

CS 7. Organic Chemistry Laboratory

(1-6) Staff

Prerequisite: consent of instructor.

Laboratory and discussion section on organic chemistry and spectroscopy, taken in conjunction with Chemistry 7B-C.

CS 10. Chemistry Colloquium

(1-6) Staff

Prerequisite: consent of instructor.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 15. Theoretical Chemistry Seminar

(1-6) Staff

Prerequisite: consent of instructor.

Course in theoretical physical chemistry emphasizing quantum mechanics.

LITERATURE**CS 1. Writing: Verse**

(1-6) Staff

Prerequisite: consent of instructor.

Practice in the writing of original verse.

CS 2. Writing: Narrative Prose

(1-6) Staff

Prerequisite: consent of instructor.

Practice in the writing of fiction.

CS 3. Writing: Expository Prose

(1-6) Staff

Prerequisite: consent of instructor.

Practice in the writing of essays and criticism.

CS 5. Literature Symposium

(1-6) Staff

Prerequisite: consent of instructor.

A continuing series of lectures, readings, and presentations by faculty, guest writers, and other professionals in the literary fields.

CS 10. Genres

(1-6) Staff

Prerequisite: consent of instructor.

Emphasis on the development of literary forms, represented in the work of major authors, essential traditions. Exploration of ways genre directs and, discovered by a topic, takes individual shape. Intensive reading, substantial exposition.

CS 11. Literary Structure: Chronological

(1-6) Staff

Prerequisite: consent of instructor.

Emphasis on periods and influences: intervals during which literary production especially corresponds with or responds to activity in the culture at large. Extensive reading and exposition.

CS 12. Literary Structure: Nonchronological

(1-6) Staff

Prerequisite: consent of instructor.

Logical, analogical, cyclical, and repetitive schemes.

CS 13. Subjects and Materials

(1-6) Staff

Prerequisite: consent of instructor.

Emphasis on style and content of literary texts: critical investigation of how matter and manner work together in serious literature. Extensive reading and exposition.

CS 14. Themes and Motifs

(1-6) Staff

Prerequisite: consent of instructor.

Emphasis on structure and meaning in literary texts: analytic focus on principles of representation, and on recurrent features, in the literature studied. Extensive reading and exposition.

CS 15. Literature Colloquium

(1-6) Staff

Prerequisite: consent of instructor.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

MATHEMATICS**CS 1. Problem Solving**

(1-6) Staff

Prerequisite: consent of instructor.

Discussion and solution of nonroutine mathematical problems.

CS 2. Project

(1-6) Staff

Prerequisite: consent of instructor.

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 3. Topics in Modern Algebra

(1-6) Staff

Prerequisite: consent of instructor.

Topics may include groups; modules; vector spaces; algebras; metric structures on vector spaces; representation theory; multilinear algebra; graded structures; universal properties; a survey of important algebraic structures.

CS 5. Computer Applications

(1-6) Staff

Prerequisite: consent of instructor.

Applications of the various campus computers and departmental micro-computers to problems in mathematics, biology, chemistry, and physics.

CS 10. Mathematics Colloquium

(1-6) Staff

Prerequisite: consent of instructor.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 20. Special Topics

(1-6) Staff

Prerequisite: consent of instructor.

Lectures on a coherent body of mathematical topics which are not usually presented in standard mathematics courses.

CS 40. Introduction to Mathematical Problems

(1-6) Staff

Prerequisite: consent of instructor.

Several nontrivial solved and unsolved mathematical problems are considered which require a minimal background. These include tiling and network problems, the solutions of which are ultimately useful in the natural sciences. May be taken as often as once per quarter.

MUSIC**CS 1. Composition**

(1-6) Staff

Prerequisite: consent of instructor.

Individual instruction in composition, usually for one hour per week.

CS 2. Analysis: Materials

(1-6) Staff

Prerequisite: consent of instructor.

Small group instruction in theoretical subjects (harmony, composition, orchestrations, etc.).

CS 3. Analysis: Forms

(1-6) Staff

Prerequisite: consent of instructor.

Small group instruction in musical forms and their development.

CS 4. Aural Disciplines

(1-6) Staff

Prerequisite: consent of instructor.

Ear training, dictation, and sight singing.

CS 5. Special Topics

(1-6) Staff

Prerequisite: consent of instructor.

Individual or small group instruction in selected subjects (individual composers and their works, special compositional techniques, etc.).

CS 6. Computer Applications

(1-6) Staff

Prerequisite: consent of instructor.

Applications of the various campus computers to problems in music.

CS 15. Music Colloquium

(1-6) Staff

Prerequisite: consent of instructor.

Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

PHYSICS**CS 4. Mechanics**

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of six units.

Classical mechanics — kinematics, vectors, motion in one, two, and three dimensions, Newton's laws, work and energy, conservation laws, momentum, collisions, and center of mass motion.

CS 5. Mechanics, Fluids, and Waves

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of six units.

Oscillatory motion, rotational motion, angular momentum, gravity and central force motion, fluid statics and dynamics, waves, sound.

CS 6. Electromagnetism

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of six units.

Electrostatics, DC circuits, magnetostatics, and Faraday's law.

CS 7. Electromagnetism, Optics

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of six units.
AC circuits, Maxwell's equations and electromagnetic waves, ray optics, and wave optics.

CS 8. Modern Physics

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of six units.
Special relativity and introduction to general relativity. Quantum phenomena of atoms and molecules.

CS 9. Physical Optics

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of six units.
The superimposition of waves, waves packets, group velocity, Fourier analysis, interference, diffraction, Fraunhofer diffraction, single slit, double slit, many slits, rectangular aperture, circular aperture, resolution, diffraction grating, and Fresnel diffraction.

CS 10. Physics Colloquium

(1-6) Staff

Prerequisite: consent of instructor.
Students receiving credit will present talks in their field on material arranged in consultation with the instructor. Credit assigned by the instructor will reflect the extent and quality of participation.

CS 20. Laboratory Project

(1-6) Staff

Prerequisite: consent of instructor. May be taken for credit as often as once each quarter.
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS 30. Reading Project

(1-6) Staff

Prerequisite: consent of instructor. May be taken for credit as often as once each quarter.
Set up by the student in consultation with the instructor, and concluding with the student's report of progress.



College of Engineering

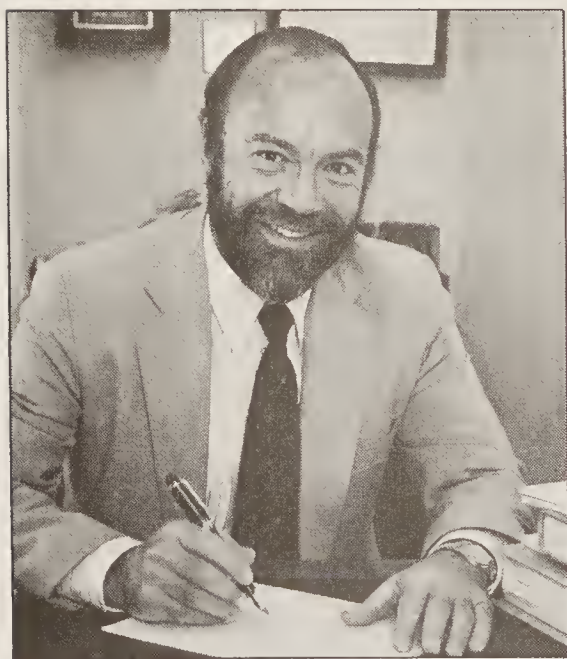
College of Engineering, Engineering I, Room 1016; Telephone (805) 961-3207

Undergraduate Office, Engineering I, Room 1030; Telephone (805) 961-2809

Minority Engineering Program, Building 513; Telephone (805) 961-4026

Dean: Robert Mehrabian

Associate Dean for Academic Affairs: Roger C. Wood



In the past decade I developed a unique research and advisory role for my university team as the nation addressed issues of nuclear reactor safety. This well-established role is continuing in the post-TMI (Three Mile Island) and Chernobyl era. Our plans are to develop a similar niche in the field of chemicals, including process safety and toxic wastes management. We must do all we can to avoid tragedies such as those in Mexico City and Bhopal. We must also prevent environmental disasters such as the recent one in Basel that eliminated all life from the Rhine. Finally, we should anticipate and carefully manage toxic waste problems rather than having to resort to the "throw money at them" approach, as is currently being done with the "Superfund."

Such problems require an interdisciplinary approach, team efforts, and work covering the spectrum from fundamental studies to applications in real systems. I consider it an important part of the educational process that my students have an opportunity to participate in all these aspects of research activity. This is not only important in preparing them for a career in the real world; it also helps enhance their societal consciousness, which is perhaps the most valuable attribute of an engineer concerned with the health and safety of the public.

T. G. Theofanous

T.G. Theofanous

Professor

Department of Chemical and Nuclear Engineering

Director

Center for Risk Studies and Safety

The College of Engineering is the second largest undergraduate college at UCSB with an enrollment of approximately 1,400 undergraduate students and 500 graduate students. The college offers the Bachelor of Science degree and advanced degree programs in five disciplines: chemical engineering, computer science, electrical engineering, mechanical engineering, and nuclear engineering. An advanced degree program is also available in materials. The chemical, electrical, mechanical, and nuclear engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The computer science undergraduate programs are accredited by the Computer Science Accreditation Commission of the Computing Science Accreditation Board.

A minimum of four years is generally necessary to complete the requirements for the Bachelor of Science degree. Completion of the four-year program provides students with the background to begin professional careers or to enter graduate programs in engineering or computer science.

The Undergraduate Office in Engineering I, Room 1030, provides general counseling for all undergraduates in the college. Advisers for the individual majors are provided by the respective departments. The *College of*

Engineering Announcement, which contains detailed information about the various programs and schedules, is published yearly and may be obtained by writing to the College of Engineering, Engineering I, Room 1030, University of California, Santa Barbara, California 93106.

ADMISSION

Applicants desiring to enter the College of Engineering must satisfy the general university admission requirements described in earlier sections of this catalog. The college strongly recommends that students who want to study engineering at UCSB plan their high school programs to include the following courses:

English	4 years
U.S. History	1 year
Algebra	2 years
Plane Geometry	1 year
Trigonometry	1/2 year
Physics or chemistry (preferably both)	1 year
Foreign Language	2 years

A high school student who is admitted to UCSB and is deficient in one or more of these prerequisites may be required to complete equivalent courses at UCSB. Students lacking these prerequisite high school courses may be delayed in entering the upper division and in graduating.

Any student who is admissible to the university may be accepted by the College of Engineering provided that the college does not have more qualified applicants than openings, in which case preference will be given to advanced-standing students who are ready to enter the upper division, and to freshmen. Additionally, if the number of qualified applicants at either the junior or freshman levels exceeds the number of openings, admission to the College of

◀ Dr. Theophanous for many years has been a consultant on nuclear and chemical reactor safety for government and industry in both the U.S. and Europe. Recently he has been a member of the team preparing the U.S. report on the Chernobyl accident and is serving on a National Academy of Engineering panel to review U.S. Department of Energy reactors in the aftermath of Chernobyl. His awards include a Best Teacher Award in the School of Nuclear Engineering at Purdue University, where he taught before coming to UCSB

Engineering may be based on further consideration of prior course work, grades, test scores, and other factors.

Students entering the College of Engineering either as freshmen or as transfer students must be enrolled in a particular curriculum within the Department of Chemical and Nuclear Engineering, the Department of Computer Science, the Department of Electrical and Computer Engineering, or the Department of Mechanical and Environmental Engineering.

ENTRANCE TO THE UPPER DIVISION

Admission to the lower division (freshman and sophomore years) does not necessarily guarantee advancement to the upper division (junior and senior year) at some later time.

Continuing students shall have completed substantially all of the lower-division requirements for the major they are pursuing. Students who have not done so should go to the undergraduate office to determine eligibility for upper-division work.

Transfer students shall have (1) satisfied the general requirements for admission to the university at the junior level for transfer students; and (2) substantially completed a lower-division engineering or computer science program of not fewer than 90 quarter-units or 60 semester-units. The program must include the subject requirements listed in the table "Subject Requirements for Entrance to the Upper Division."

(The university accepts a maximum of 105 quarter-units or 70 semester-units of credit for college courses completed at a two-year community college.)

DEGREE REQUIREMENTS

To receive a Bachelor of Science degree from the College of Engineering, two sets of requirements must be met: university degree requirements and college degree requirements.

University Degree Requirements

All undergraduate students must satisfy the university residency, Subject A, American History and Institutions, units completed, and scholarship requirements. They are

Subject Requirements for Entrance to the Upper Division

For Engineering Majors	Minimum Number of Quarter-Units
Analytic Geometry and Calculus (including differential equations)...	24
Chemistry (for science and engineering students).....	12
Physics (for science and engineering students).....	16
Engineering*	8-16
Humanities-Social Studies-English	16
Unspecified Subjects	6-14
TOTAL REQUIRED	90
*Course selections should include digital computer programming (FORTRAN), electric circuits and devices, and those courses that are specified for the lower-division requirements for the engineering major desired. Typical courses include statics, strength of materials, and computer organization.	
For Computer Science Majors	Minimum Number of Quarter-Units
Analytic Geometry and Calculus	12
Differential Equations	4
Modern Algebra	4
Linear Algebra	4
Computer Programming (PASCAL)	4
Programming Methods	4
Foundations of Computer Science	4
Introduction to Computer Systems	4
Probability and Statistics for Computer Science	4
Mathematics, Science, and Engineering Subjects	12
Humanities-Social Studies-English	16
Unspecified Subjects	18
TOTAL REQUIRED	90

described fully in "Undergraduate Education at UCSB."

College Undergraduate Degree Requirements

All undergraduate students must satisfy the preparation for the major, the major, the General Education, and scholarship requirements. Preparation for the major and the major requirements for each program offered by the College of Engineering are set forth in subsequent sections of this catalog.

Students who were first-term freshmen before fall 1986 may fulfill the General Education requirements in effect before fall 1986 (the old General Education program).

Students who were first-term freshmen in fall 1986 or later must fulfill the General Education requirements that went into effect in fall 1986 (the new General Education program).

All transfer students entering UCSB in fall 1989 or later must fulfill the requirements of the new General Education program.

These requirements may be met with courses satisfactorily completed on this campus or with equivalent courses completed at another accredited college or university. Lists of courses satisfying the various General Education area requirements are available in the Undergraduate Office of the College of Engineering.

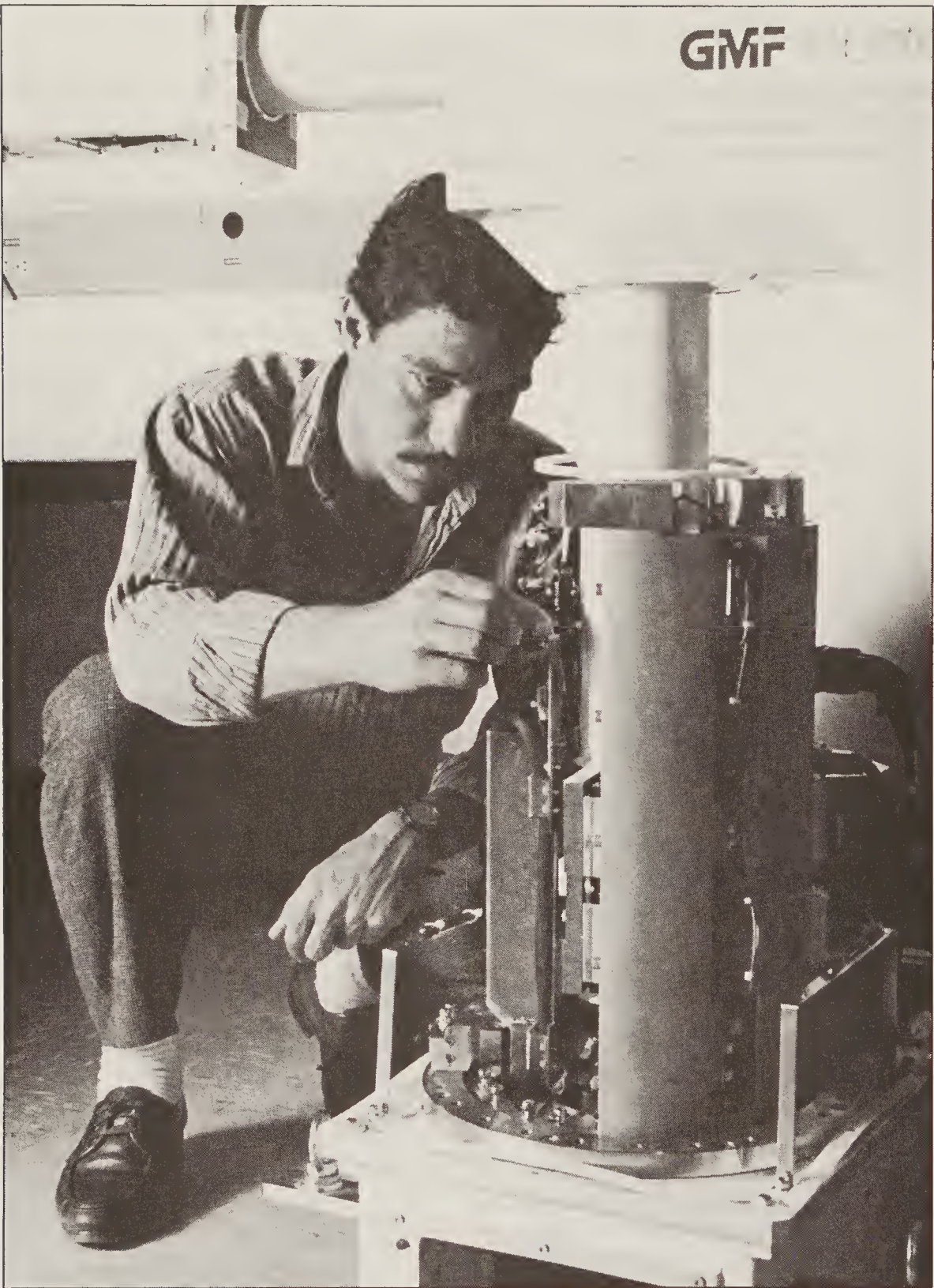
New General Education Program. Students should refer to the paragraphs above to determine whether they are eligible to fulfill the requirements of the new General Education program.

- The new General Education requirements for the College of Engineering include:
- English 2A-B (Area A)..... 8 units (Communication Studies 10, 11, or 43 may be substituted for English 2B.)
 - Social Sciences (Area D) and Civilization and Thought (Area E)..... 8-15 units
 - The Arts and Literature (Area F)..... 8-15 units

A total of 23 units is required from areas D, E, and F. At least eight units must be from Areas D and E combined, with at least four of these units from Area E-1. At least eight units must be completed in Area F, and at least four of these must be from F-2a or F-2b.

In the process of fulfilling the new General Education area requirements, students must include the following:

- a. at least four courses that require the writing of one or more papers of at least 1,800 words. (These courses are identified in the handout "New General Education Requirements," available in the College of Engineering Undergraduate Office.)
- b. at least two upper-division courses, each selected from a



At work in UCSB's unique Center for Robotic Systems in Microelectronics, graduate student Reza Imani is helping modify this robot for work assembling gyroscopes in a vacuum environment. The center is one of six Engineering Research Centers established by the National Science Foundation in 1985.

different department in which the student has already successfully completed a course.

No more than two courses taken from the same department may be applied to the General Education requirement. The student should consult with the Office of Undergraduate Studies in the College of Engineering for additional information about General Education requirements.

Old General Education Program. Students should refer to the paragraphs above to determine

whether they are eligible to fulfill the requirements of the *old* General Education program.

The old General Education requirements for the College of Engineering include:

English 2A-B (Area A).....	8 units
(Communication Studies 10, 11, or 43 may be substituted for English 2B)	
Fine Arts (Area C) and Humanities (Area D)	8-15 units
History, Social Sciences, Psychology (Area E).....	8-15 units

A total of 23 units is required from Areas C, D, and E, with no fewer than eight units from Areas C and D combined and no fewer than eight units from Area E. No more than two courses taken from the same department may be applied to the General Education requirement. Additional information about these General Education requirements is available in the Office of Undergraduate Studies, College of Engineering.

Students must maintain a 2.0 grade-point average in work taken in preparation for the major, in the major, and in all work completed at the university. Students who fail to earn a 2.0 grade-point average in either the preparation for the major or the major may, at the option of the department, be denied the privilege of continuing in the major. Individual departments may have higher grade-point average requirements.

The unit differences between the 180 units specified for the baccalaureate degree and the number of units specified for the preparation for the major, the major, and General Education are designated as free elective units. Students may choose from any course offering open to them to meet this requirement.

College Entrance Examination Board (CEEB) Advanced Placement Credit. Students may satisfy some of the requirements of the College of Engineering through the CEEB Advanced Placement Tests. Credit for these tests is assigned as follows:

Computer Science
With a score of 3, 4, or 5, equivalent credit will be granted for Computer Science 5PA. A score of 4 may be substituted for Computer Science 10 at the student's request by petition, and a score of 5 may be substituted (by petition) for both Computer Science 10 and 20. However, students with high scores may take Computer Science 10 and/or 20 for full credit.

English
With a score of 3, equivalent credit will be granted for the Subject A requirement (English 1). With a score of 4, equivalent credit will be granted for the Subject A requirement and English 2A. With a score of 5, equivalent credit will be granted for English 2A-B.

History

Under the old General Education program, with a score of 3, 4, or 5, equivalent credit will be granted for two history courses in the General Education history requirement. Under the new General Education program, with a score of 3, 4, or 5 in American history, 10 units of credit toward graduation will be awarded, but no general education course credit is granted. If the score of 3, 4, or 5 is in European history, equivalent credit will be granted for two history courses in the General Education history requirement (E-2). Under both the old and new programs, advanced placement credit in U.S. history will satisfy the American History and Institutions requirement.

Mathematics

With a score of 3, 4, or 5 on Examination AB, equivalent credit will be granted for Mathematics 3A; students should enroll in Mathematics 3B. With a score of 3, 4, or 5 on Examination BC, equivalent credit will be granted for Mathematics 3A-B; students should enroll in Mathematics 3C.

HONORS

The College of Engineering gives public recognition to its outstanding undergraduate students by awarding Dean's Honors at the end of each regular academic term to students who have earned a 3.5 grade-point average for the quarter and have completed a program of 12 or more graded units. (Grades of I or NP automatically disqualify students for eligibility for Dean's Honors.) The Dean's Honors List is posted quarterly, and the award is noted quarterly on the student's permanent transcript.

Graduating students of the College of Engineering who have achieved distinguished scholarship while at the university may qualify for Honors, High Honors, or Highest Honors at graduation.

MINIMAL PROGRESS REQUIREMENTS

A student in the College of Engineering will be placed on academic probation if the total number of units passed at UCSB is fewer than 36 at the end of the third term of enrollment; 72 at the end of the sixth term of enrollment; 108 at the end of the ninth term; or 144 at the end of the twelfth term. At least

three-fourths of the minimum number of academic units passed must include courses prescribed for the major.

The following courses may be counted toward the unit minimums: courses repeated to raise C-, D, or F grades; courses passed by examination; courses graded IP (In Progress); courses passed during summer session at UCSB or at another accredited college or university and transferred to UCSB.

Students must obtain the approval of the dean of engineering to deviate from these requirements. Approval will normally be granted only in the case of medical disability, severe personal problems, or accident.

Students enrolled in dual-degree programs or in individualized programs of study must submit their proposed programs of study to the dean of engineering for approval. The individual programs must contain comparable standards of minimal academic progress.

CHANGE OF MAJOR AND CHANGE OF COLLEGE

Undergraduate students in the College of Engineering may petition for a change to another major in the college by obtaining the approval of the chair of the prospective department and the dean of the college. Students normally must satisfy the prerequisites of the prospective department.

Students planning to enter an engineering major will be expected to complete at least 30 units at UCSB before a change of major will be approved. Students planning to enter the pre-computer science program must complete at least 16 units of pre-major course work at UCSB, including eight units in Computer Science, with at least a 3.0 GPA for all pre-major courses completed at the University of California. Students who have completed the entire computer science pre-major with at least a 2.75 University of California grade-point average will be admitted to full major standing upon petition whether or not they have been officially declared pre-majors. Students who have completed more than 105 units will not be considered for a change of major in engineering or computer science unless they can demonstrate that they will be able to complete all the degree requirements

for their proposed program without exceeding 195 total units.

The following courses or their equivalents must be completed before petitioning for a change of major to chemical, nuclear, electrical, or mechanical engineering: Mathematics 3A-B, Chemistry 1A-AL-B-BL, Engineering 3, Physics 7A.

Undergraduate students enrolled in other colleges of UCSB may petition to enter a major in the College of Engineering, but they must satisfy all the conditions required of students enrolled in the College of Engineering. Petitions for changing to an engineering major will be accepted only during the third through sixth weeks of the spring quarter. Only a limited number of petitions will be approved, and selection for entry into the major will be based on UC grade-point averages. Petitions for changing to the pre-computer science major may be filed at any time upon meeting the above requirements.

ENGINEERING RESEARCH CENTERS

Center for Risk Studies and Safety

Engineering Research Center Building (ERC); 6740 Cortona Drive, Goleta, CA 93117; telephone (805) 961-4932.

Director: Theofanis G. Theofanous.

Center for Computational Sciences and Engineering

Engineering I, Room 3111; telephone (805) 961-3221.

Director: John L. Bruno.

Associate Director: Richard A. Kemmerer.

Center for Robotic Systems in Microelectronics

Engineering Research Center Building (ERC); 6740 Cortona Drive, Goleta, CA 93117; telephone (805) 961-4791 or (805) 961-4973.

Director: Susan Hackwood.

Technical Director: Gerardo Beni.

Associate Director: Evelyn L. Hu.

Compound Semiconductor Research Center

Engineering II, Room 1231; telephone (805) 961-2149.

Director: James L. Merz.

High Performance Composites Center

Engineering II; telephone (805) 961-4362. Co-Director: Anthony G. Evans. Co-Director: Robert Mehrabian.

Ocean Engineering Laboratory

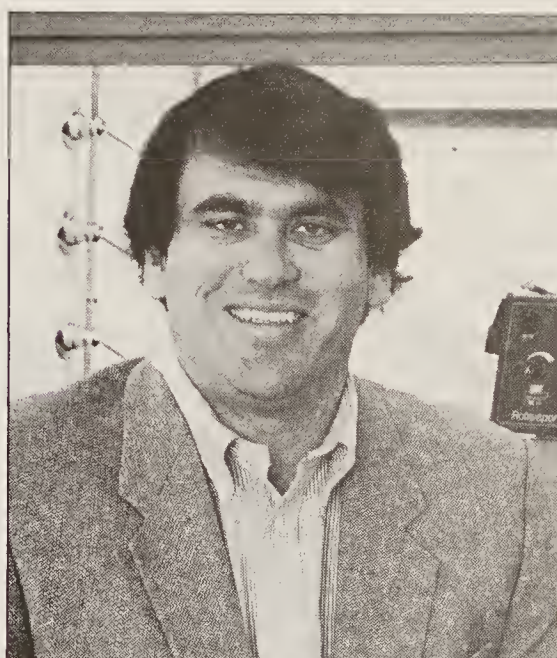
Engineering Research Center Building (ERC); 6740 Cortona Drive, Goleta, CA 93117; telephone (805) 961-2396. Director: Marshall P. Tulin.

Chemical and Nuclear Engineering

Department of Chemical and Nuclear Engineering, Engineering II, Room 3355; Telephone (805) 961-3412 Department Chair: Sanjoy Banerjee. Department Vice-Chair: Orville C. Sandall.

Faculty

- Pramod Agrawal, Ph.D., Purdue University, Assistant Professor (*biochemical engineering, fermentation science*)
- Sanjoy Banerjee, Ph.D., University of Waterloo, Professor (*transport processes, multiphase systems, process safety*)
- Henri J. Fenech, Sc.D., Massachusetts Institute of Technology, Professor (*reactor engineering, safety, and economics*)
- Owen T. Hanna, Ph.D., Purdue University, Professor (*theoretical methods*)
- Shinichi Ichikawa, Ph.D., Stanford University, Assistant Professor (*adsorption and heterogeneous catalysis*)
- Jacob Israelachvili, Ph.D., University of Cambridge, Professor (*surface and interfacial phenomena, adhesion, colloidal systems, surface forces*)
- Frederick F. Lange, Ph.D., Pennsylvania State University, Professor (*processing, ceramics, microstructure, mechanical properties*)
- Glenn E. Lucas, Ph.D., Massachusetts Institute of Technology, Associate Professor (*radiation damage to structural materials, mechanical and structural analysis of nuclear systems*)
- Duncan A. Mellichamp, Ph.D., Purdue University, Professor (*process dynamics and control, real-time digital control, engineering economics*)
- John E. Myers, Ph.D., University of Michigan, Professor (*transport of mass, energy, and momentum*)
- G Robert Odette, Ph.D., Massachusetts Institute of Technology, Professor (*radiation effects and materials technology for fission and fusion reactors*)
- Philip Alan Pincus, Ph.D., UC Berkeley, Professor (*theory of surfactant aggregates and colloidal systems*)
- Edward Profio, Ph.D., Massachusetts Institute of Technology, Professor (*reactor physics, nuclear instrumentation, bionuclear engineering*)
- Robert G. Rinker, Ph.D., California Institute of Technology, Professor (*chemical kinetics, reactor design, catalysis*)
- Manfred Rühle, Dr. rer. nat., University of Stuttgart, Visiting Professor (*microstructural characterization, electron microscopy, ceramics, composites, interfaces*)



Most of my time is spent studying a class of molecules called amphiphiles. Amphiphiles are the schizophrenics of the chemical world. One end of an amphiphilic molecule loves water; the other end hates water. This causes amphiphiles to spontaneously organize to separate watery parts of a solution from more oily parts. The organization compartmentalizes a solution; each compartment has an oily inside and a watery outside or vice versa.

The stability and size of the compartments depends on the amphiphile. For example, an amphiphile that makes a good detergent forms many small dynamic compartments; the compartments must open easily to trap the oil from a spot and carry it away. Similar amphiphiles are used to recover crude oil trapped in porous rocks underground. However, amphiphiles that compose a cell membrane form fewer but much more stable compartments. Stable membranes like these help regulate the complex environment cells need to function.

UCSB has the combination of strong basic sciences and engineering essential to fundamental research. None of the traditional barriers between disciplines exist at UCSB; physicists talk to chemists, biologists work with engineers. There are few places that a student can be part of this kind of wide-open cross-disciplinary environment and experience the satisfaction that comes from attacking real-life problems.

Joe Zasadzinski

Joseph A.N. Zasadzinski
Associate Professor
Department of Chemical and Nuclear Engineering

Dr. Zasadzinski recently received a Presidential Young Investigator Award, a five-year fellowship that is one of the country's highest scientific honors. He has held National Science Foundation fellowships and was a member of the research staff at AT&T Bell Laboratories before coming to UCSB. Recent presentations include invited lectures at the 11th International Liquid Crystal Conference and the March 1986 meeting of the American Physical Society.

- Orville C. Sandall, Ph.D., UC Berkeley, Professor (*transport of mass, energy, and momentum; separation processes*)
- Dale E. Seborg, Ph.D., Princeton University, Professor (*process dynamics and control, computer control*)
- Paul Smith, Ph.D., Rijks Universiteit Groningen, Professor (*polymers, polymer processing, phase behavior*)
- Theofanis G. Theofanous, Ph.D., University of Minnesota, Professor, Center for Risk Studies and Safety Director, (*nuclear and chemical plant safety, multiphase flow, thermal hydraulics*)
- Joseph Zasadzinski, Ph.D., University of Minnesota, Assistant Professor (*surface and interfacial phenomena, structure of microemulsions*)

The Department of Chemical and Nuclear Engineering offers the B.S., M.S., and Ph.D. degrees in chemical engineering, and the B.S. and M.S. degrees in nuclear engineering. A Ph.D. in chemical engineering with a nuclear emphasis can be pursued. The B.S. degrees in both chemical and nuclear engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

At the undergraduate level, emphasis is placed on a thorough background in the fundamental principles of science and engineering, strongly reinforced by laboratory courses in which students become familiar with the application of theory. At the graduate level, students are further required to demonstrate competence in conducting basic and applied research.

The B.S. degree in chemical engineering provides excellent preparation for work in chemical process design and development and in technical management, and for professional graduate degree programs. Nuclear engineering offers varied opportunities for rapid professional advancement and a chance to make significant contributions to the challenging problems of energy, environment, health, and society.

Students who complete a major in chemical or nuclear engineering may be eligible to pursue a California teaching credential. Interested students should consult the credential adviser in the Graduate School of Education as soon as possible.

Each undergraduate in the department is assigned a faculty adviser who is available to counsel students on both academic and personal concerns. Graduate students are assigned research advisers. Undergraduates in other majors who plan to change to a major in the Department of Chemical and Nuclear Engineering should consult the department for requirements.

Several publications are available from the department office describing the undergraduate and graduate programs. The College of Engineering also publishes an annual *Announcement* that includes details of course offerings.

Laboratory Facilities of the Department

The **real-time digital computing laboratory** and the **process dynamics and control laboratory** in chemical engineering contain a multi-user S/130 Eclipse digital computer for real-time and interactive graphics applications. Laboratory-scale equipment is available for demonstrating liquid-level, heat-transfer, and gas-pressure surge systems. A new, fully instrumented pilot-scale distillation facility is used for advanced process and computer control research.

The **transport and kinetics laboratories** in chemical engineering contain well-instrumented equipment for studying heat, mass, and momentum transfer, as well as separation processes, chemical kinetics, catalysis, thermodynamics,

and chemical reactor behavior. Some of the instruments include gas chromatographs, automatic titrimeters, pH meters, anemometers, digital integrators, potentiometers, mass flowmeters, pressure transducers, and microprocessors.

The **neutronics laboratory** in nuclear engineering includes the 200 KeV Cockroft-Walton accelerator, fast-spectrum sphere, and isotopic alpha, beta, gamma, and neutron radiation sources. The **nuclear measurements laboratory** includes nuclear radiation detectors, multichannel analyzer, on-line computer terminal, and nuclear medicine facilities.

The **multiphase systems laboratory** includes facilities for major thermal hydraulic research for advanced reactor development. There are also laboratory facilities to study transient thermal hydraulics, wave phenomena, and two-phase flow related to safety in the power and process industries.

The department also shares with the materials department **extensive laboratory facilities for materials research.** These include a materials characterization laboratory with seven electron microscopes, a metallography laboratory, x-ray instrumentation, mechanical testing laboratory with five instrumental test frames, and a high-temperature creep laboratory.

The **catalysis laboratory** has unique tools for basic research. Surface science facilities include an ultra-high vacuum chamber, turbo-molecular pump, low- to high-pressure sample transfer system, quadrupole mass spectrometer, temperature programmer, and electron gun evaporator. Also available are glass systems for BET, chemisorption and various reactions.

The **biochemical engineering laboratory** is equipped with fully instrumented stirred-tank, bubble-column, and air-lift fermenters interfaced to a real-time and multinon MICRO/PDP-11 computer for modeling and control studies of microbial and mammalian cells in culture. A gravity stream sterilizer, an automated off-gas analysis system, gas and liquid chromatographs, spectrophotometers, shakers, centrifuges and incubators support the operations of different fermentation systems.

UNDERGRADUATE PROGRAM

Bachelor of Science—Chemical Engineering

Preparation for the major. Students should plan to meet the General Education requirements common to all engineering programs. A total of 101 lower-division units is required, of which 70 are specified for the major: Engineering 3, Chemical Engineering 10 and 110A-B, Chemistry 1A-B-C and 1AL-BL-CL, ECE 6A-B, Mathematics 3A-B-C and 5A-B-C, and Physics 7A-B-C-D and 7CL-DL (Physics 1,2,3,4, and 5 are acceptable alternates).

Upper-division major. A total of 79 units is required, of which 72 upper-division units are specified: Chemical Engineering 120A-B-C, 128, 130A, 140A-B, 150A-B, 180A-B, 181, and 182; Chemistry 113A-B and 130A-B; Nuclear Engineering 180; and Mechanical Engineering 180L. Three units of technical electives, three units of chemical engineering electives, and six units of chemistry electives are also required; lists of approved electives are available in the department office. Transfer students who have completed most of the lower-division courses listed above

and are entering the junior year of the chemical engineering program may take Chemical Engineering 10 concurrently with Chemical Engineering 120A in the fall quarter.

Cooperative Program—Chemical Engineering and Chemistry

Chemical engineering students with a strong interest in chemistry are advised to consider a five-year program leading to a B.S. degree in both chemical engineering and chemistry. Details of the program are available from the Department of Chemical and Nuclear Engineering or the Department of Chemistry. Other double majors can be arranged on an individual basis in areas such as chemical engineering and biological sciences or chemical engineering and nuclear engineering.

Bachelor of Science—Nuclear Engineering

Preparation for the major. In addition to the General Education requirements common to all engineering programs, 67 lower-division units are required: Engineering 3, Nuclear Engineering 10 and 112, Chemistry 1A-B-C and 1AL-BL-CL, Mathematics 3A-B-C and 5A-B-C, ECE 6A-B, and Physics 7A-B-C-D and 7CL-DL (Physics 1,2,3,4, and 5 are acceptable alternates). Transfer students who have completed the majority of lower-division courses will be accepted into the program as juniors.

Upper-division major. A total of 82 units is required, of which 66 units are specified. Nuclear Engineering 111, 116, 121, 122, 125, 130A-B, 140A-B, 144, 145, 150 and 180; Chemical Engineering 120A-B; and Physics 115A-B and 124. Six units of technical electives are also required; a list of approved electives is available in the department office.

Cooperative Program—Nuclear Engineering and Physics

Nuclear engineering students with a strong interest in physics are advised to consider a five-year program leading to a B.S. degree in nuclear engineering and a B.A. or B.S. degree in physics. Students may obtain details of the program from the Department of Chemical and Nuclear Engineering or the Department of Physics.

GRADUATE PROGRAM

Master of Science—Chemical and Nuclear Engineering

Admission

Acceptance for admission to the M.S. program is subject to the requirements of the Graduate Division. It is expected that most applicants for the M.S. degree in chemical engineering will have obtained undergraduate degrees in chemical engineering. However, students with degrees in other branches of engineering or in science may be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for graduate work.

Many applicants for the M.S. degree in nuclear engineering will have obtained undergraduate degrees in nuclear engineering. However, students with degrees in other branches of engineering or in science have pursued graduate work in nuclear engineering. Such students may

be accepted with the provision that they take designated undergraduate courses in conjunction with their graduate work.

Degree Requirements

Two plans are available for the M.S. degree in both chemical and nuclear engineering. Most students will follow Plan 1, although students with special backgrounds or requirements will be permitted, at the option of the department, to follow Plan 2. Knowledge of a foreign language is not required.

Plan 1. Thirty units of course credit are required, of which approximately half must be chosen from graduate-level courses in chemical or nuclear engineering. The remaining units may be chosen from upper-division or graduate-level courses in chemical or nuclear engineering or other branches of engineering or science, as approved by the department. In addition to meeting the course requirements, each student is expected to pursue a research project, either theoretical or experimental, and to describe the results of the research in a thesis. The student must present and defend the thesis in an oral examination.

Plan 2. Forty-two units of course credit, of which approximately two-thirds must be chosen from graduate-level courses in chemical or nuclear engineering. The remainder may be chosen on the same basis as outlined in Plan 1. Only students who have had adequate research experience prior to beginning graduate work, or who plan to continue in doctoral work at UCSB, will be permitted to follow Plan 2. Plan 2 candidates must pass an oral examination based on subjects studied in the graduate courses.

Doctor of Philosophy—Chemical Engineering

Admission

Admission requirements are the same as for the degree of Master of Science.

Degree Requirements

The student will be expected to plan and secure approval of a program of courses in chemical engineering and related fields which will provide a depth of understanding in the principal areas of chemical engineering. A Ph.D. program with emphasis in nuclear engineering and related fields may also be pursued.

A written screening examination will be administered by the departmental graduate committee during the first year. If the student passes the screening examination and has continued to make satisfactory progress in courses, a doctoral committee will be recommended to supervise all further progress and examinations. This committee will then administer an oral examination on subject matter related to the research and any additional material it considers desirable, and will make a recommendation on advancement to candidacy for the Ph.D. Knowledge of a foreign language is not required.

Each student is expected to pursue a research project, either theoretical or experimental, and to describe the results of the research in a dissertation. The student must present and defend the dissertation in an oral examination. The period of time between advancement to candidacy and completion of the final oral examination is expected to be approximately one and one-half years.

CHEMICAL ENGINEERING COURSES

LOWER DIVISION

Engineering 3. Computer Solutions of Engineering and Science Problems

(3) Staff

Prerequisites: Mathematics 3A, can be taken concurrently. Limited to lower-division students in engineering or consent of instructor; not open to students who have completed Computer Science 5FO.

Application of computers to engineering and scientific problems. Provides working knowledge of FORTRAN language programming, using a structured FORTRAN compiler. Students will use the computer.

10. Introduction to Chemical Engineering

(3) Staff

Prerequisites: Chemistry 1A-B-C; Mathematics 3A-B-C; Engineering 3, Computer Science 5FO, or equivalent.

Elementary principles of chemical engineering. The major topics discussed include material and energy balances, stoichiometry, and thermodynamics.

UPPER DIVISION

Engineering 100. Engineering Economic Analysis

(3) Staff

Prerequisites: upper-division standing in engineering or consent of instructor. Not open to students who have received credit for Chemical Engineering 181.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering (F,S)

110A-B. Chemical Engineering Thermodynamics

(3-3) Staff

Prerequisite: Mathematics 5A.

The first and second laws of thermodynamics are used to predict changes of state in frictional processes. Volumetric and phase behavior of real gases and liquids in multicomponent systems are studied. Consideration is given to chemical equilibrium in reacting systems.

120A-B-C. Transport Processes

(4-3-3) Myers

Prerequisites: Mathematics 5A-B-C; Physics 7D.

Principles and applications of fluid mechanics, heat transfer, and mass transfer in determining rates of transport processes.

124. Advanced Topics in Transport Phenomena/Safety in Chemical Engineering

(3) Theofanous

Prerequisites: Chemical Engineering 120A-B-C. Runaway reactions, emergency relief, containment concepts, environmental effects. Causes and effects of explosions. Toxic wastes, reprocessing, transportation, disposal. Intended to be a followup to the transport series (120A-B-C).

128. Equilibrium Stage Processes

(3) Sandall

Prerequisites: Chemical Engineering 10, 110A. Basic principles and design techniques of equilibrium-stage separation processes. Emphasis is placed on binary distillation, liquid-liquid extraction, and multicomponent distillation.

130A-B-C-D. Theoretical Methods in Chemical and Nuclear Engineering

(3-3-3) Hanna

Prerequisites: Mathematics 5A-B-C.

Coordination and extension of previous work in chemical and nuclear engineering using advanced theoretical methods.

140A-B. Chemical Kinetics of Industrial Processes

(3-3) Rinker

Prerequisites: Chemical Engineering 110A-B; 120A-B-C.

Kinetics of homogeneous and heterogeneous reacting systems, with and without catalysis and its use in predicting chemical conversion in flow and nonflow reactors. Emphasis is placed on the behavior and design considerations of packed-bed reactors.

146. Heterogeneous Catalysis

(3) Ichikawa

Prerequisite: consent of instructor.

Concepts and definitions. Physical and chemical methods of catalyst characterization. Adsorption, desorption, and surface reaction on well-defined surfaces. Thermodynamic and kinetic treatments of overall reactions on uniform and nonuniform surfaces. Correlations and theoretical approaches in chemical engineering catalysis.

150A-B. Chemical Process Dynamics and Control

(3-3) Mellichamp, Seborg

Prerequisites: Chemical Engineering 120A-B-C, 140A, ECE 6A

Fundamentals of chemical process dynamics and automatic control including servomechanism theory, transfer functions, block diagrams, frequency response, digital and analog computer simulation.

157. Introduction to Real-Time Computing

(4) Mellichamp

Prerequisite: enrollment subject to departmental approval. Students who have earned credit for ECE 15 or Computer Science 30 or equivalent will not be permitted to take Chemical Engineering 157 for credit.

Basic principles of real-time digital information processing with emphasis on the use of computer for data acquisition or feedback control of typical processes.

159A. Real-Time Computing

(3) Mellichamp

Prerequisite: Chemical Engineering 157 or consent of instructor

A study of system architecture, both hardware and software, required to perform real-time operations. The concepts of parallel or multi-task programming and their application to elementary real-time problems.

159B. Real-Time Digital Computing Applications

(3) Mellichamp

Prerequisite: Chemical Engineering 159A.

The application of real-time computing principles to commonly encountered problems such as

process data acquisition and control, multi-processor networks, etc. Emphasis on hardware and software modularity and on the optimal allocation of resources.

160. Polymer Systems

(3) Rinker

Prerequisite: consent of instructor

Treats polymerization from a chemical engineering point of view. Some topics which are considered include polymerization kinetics, polymer rheology, solid-state properties, and reactor design for polymerization.

171. Introduction to Biochemical Engineering

(3) Agrawal

Prerequisites: Chemical Engineering 120 and 140, or consent of instructor.

An introduction to biochemical engineering covering enzyme and microbial growth kinetics with emphasis on the application of chemical engineering principles to the design and operation of industrial microbial processes.

180A-B. Chemical Engineering Laboratory

(3-3) Staff

Prerequisites: Chemical Engineering 110A-B; 120A-B-C.

Experiments in thermodynamics, fluid mechanics, heat transfer, mass transfer, reactor kinetics, and chemical processing. Experimental design, analysis of results, and preparation of reports.

181. Cost Principles for Chemical Processes

(2) Staff

Prerequisites: Chemical Engineering 120A-B-C and 140A. Not open to students who have received credit for Engineering 100. May be repeated for a maximum of four units.

Engineering economic analysis. Cost estimation. Interest and investment costs. Profitability. Uncertainty and risk.

182. Design and Cost Principles of Chemical Processes

(4) Staff

Prerequisites: Chemical Engineering 110A-B; 120A-B-C; 140A-B.

The use of chemical engineering cost principles in solving comprehensive problems in the design of a chemical process.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisite: consent of instructor. Check with department for quarters offered.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular departmental curriculum.

198. Independent Studies in Chemical Engineering

(1-5) Staff

Prerequisites: students must (1) have attained upper-division standing; (2) have a minimum 3.0 grade-point average for the preceding three quarters; (3) have completed at least two upper-division courses in chemical engineering. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Individual study, either experimental or theoretical, open to qualified seniors in chemical engineering.

GRADUATE COURSES

210. Advanced Thermodynamics

(3) Israelachvili

Prerequisite: consent of instructor.

Revision of first and second laws, real gases, solutions and solubilities, phase and chemical equilibria, and time permitting, electrolytes, aggregation and self-associating systems, or surface thermodynamics and adsorption.

220A-B-C. Advanced Transport Processes

(3-3-3) Sandall

Prerequisite: consent of instructor. Same course as Nuclear Engineering 220A-B-C.

A study of the basic laws of momentum, energy, and mass transport with emphasis on the prediction of transport rates in chemical and nuclear engineering applications.

222A-B. Colloids and Interfaces

(3-3) Israelachvili

Prerequisites: consent of instructor. Chemical Engineering 222A is prerequisite to 222B.

A: Introduction to the various intermolecular forces in pure gases, liquids, and solids. Solute-solute and interparticle forces in liquids: van der Waals forces, screened electrostatic, hydrophobic solvation, hydrogen bonding forces. Colloidal systems, stability, etc. Surfaces, energy, tension, etc.

B: Aggregation phenomena in liquids: microemulsions, lamellar phases, biological assemblies, etc. Surface films: Langmuir's-Blodgett films, thick wetting films. Steric interfaces between polymer-covered surfaces in solution in polymer liquids. Phase interdependence of interparticle forces.

230A-B-C. Advanced Theoretical Methods in Chemical and Nuclear Engineering

(3-3-3) Hanna

Prerequisite: consent of instructor.

Mathematical formulation and solution of problems drawn from the fields of fluid mechanics, heat and mass transfer, thermodynamics, kinetics, and reactor design.

234. Dynamics of Chemical Systems

(3) Staff

Prerequisite: consent of instructor.

Analytical study of linear and nonlinear system dynamics in chemical engineering. Equilibrium point multiplicity and stability, oscillatory and non-oscillatory bifurcations, spatial patterns, asymptotic studies of state space trajectories.

240A-B. Advanced Chemical Reactor Design

(3-3) Rinker

Prerequisite: consent of instructor.

Following review of the theory of reaction kinetics for catalyzed and noncatalyzed systems, detailed consideration is given to design and performance of chemical reactors. Mathematical studies of stability and optimization are emphasized in relationship to mass, energy, and momentum transport.

246. Advanced Catalysis

(3) Ichikawa

Prerequisite: consent of instructor

Selected topics in catalytic processes of industrial interest are discussed at the molecular level with emphasis on the kinetic treatment of elementary steps on solid surfaces. Includes modern surface science approaches.

250. Advanced Process Dynamics

(3) Mellichamp

Prerequisite: consent of instructor.

Analysis of unsteady state chemical processes with emphasis on multivariable systems, state variable techniques, model reduction, modal analysis and control, and optimal structure of feedback systems.

252. Advanced Process Control

(3) Seborg

Prerequisite: Chemical Engineering 250 or consent of instructor.

Advanced topics in process control including sampled-data systems, digital control algorithms, decoupling control, time delay compensation, multivariable control techniques, and optimal control.

271. Advanced Biochemical Engineering

(3) Agrawal

Prerequisite: Chemical Engineering 171 or consent of instructor.

Advanced topics of current interest in biochemical engineering. Examples include kinetics of intracellular regulation, recombinant-DNA technology, immobilized-biocatalyst systems, tissue-culture applications, bioseparation processes, and computer applications in biotechnology.

290. Seminar

(1/2) Staff

May be repeated for credit.

Research presentation by graduate students.

594. Special Topics

(1-4) Staff

Special seminar on research subjects of current interest.

596. Directed Reading and Research

(2-4) Staff

A written proposal for each tutorial must be approved by the department chair.

598. Master's Thesis Research and Preparation

(1-12)

Not applicable to course requirement for M.S. degree.

Only for research underlying the thesis and writing the thesis.

599. Dissertation Research and Preparation

(1-12) Staff

Only for research underlying the dissertation and writing the dissertation.

NUCLEAR ENGINEERING COURSES

LOWER DIVISION

Engineering 3. Computer Solutions of Engineering and Science Problems

(3) Staff

Prerequisites: Mathematics 3A, can be taken concurrently. Limited to lower-division majors in engineering or consent of instructor; not open to students who have completed Computer Science 5FO.

Application of computers to engineering and scientific problems. Provides working knowledge of FORTRAN language programming, using a structured FORTRAN compiler. Students will use the computer.

10. Introduction to Nuclear Energy

(3) Staff

A survey course introducing various aspects of nuclear energy and radiation. Energy demand and resources. Principles of fission and fusion reactors. Basis of radiation protection standards. Environmental effects of nuclear plants, reactor safety, and radioactive waste disposal.

UPPER DIVISION

Engineering 100. Engineering Economic Analysis

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,S)

111. Isotopes and Applied Radiation

(3) Profio

Radioactive and machine sources of radiation. Interactions of radiation with matter. Chemical and biological effects. Detection and dosimetry. Applications of radioisotopes and radiation in medicine, research, and industry.

112. Principles of Nuclear Energy Conversion

(3) Staff

Prerequisites: Chemistry 1C, Mathematics 3C.

Thermodynamic principles and laws with emphasis on applications to the problems of nuclear engineering. Relations of macroscopic and microscopic approaches discussed along with some results from statistical mechanics.

116. Nuclear Materials and Radiation Effects

(3) Odette, Lucas

Prerequisites: Nuclear Engineering 115, Physics 115A-B.

Application of fundamental principles of nuclear physics and materials science to nuclear technology. Materials for nuclear applications and radiation effects.

121. Nuclear Measurements Laboratory

(3) Profio

Prerequisite: Nuclear Engineering 111 recommended.

Nuclear electronics and measurements of nuclear radiations. Topics include: radiation protection and dosimetry, radioactive decay, counting statistics, range of charged particles, gamma ray and neutron attenuation and scattering, pulse and dc nuclear electronics and detectors.

122. Nuclear Safety and Environmental Impact

(3) Profio, Fenech, Banerjee

Prerequisite: Nuclear Engineering 111 recommended.

Radiological safety and environmental impact. Dispersion of radioactivity in the environment. Reactor safety analysis including effects of transients and loss of coolant.

125. Neutronics Laboratory

(4) Profio

Prerequisites: Nuclear Engineering 140A-B recommended.

Measurements of neutronic behavior, investigating neutron diffusion, kinetics, and operation of the L-77 reactor.

130A-B. Nuclear Systems Engineering and Design

(3-3) Fenech, Lucas

Prerequisite: Nuclear Engineering 144.

Nuclear power cycles. Heat removal and fluid flow in nuclear reactor core. Power and temperature distribution in core. Thermal stresses and fatigue in components. Nuclear fuel elements design and performance. Flow-induced vibrators. Various reactor concepts.

140A-B. Nuclear Systems Theory

(3-3) Staff

Prerequisite: Nuclear Engineering 144.

The fundamental physical principles underlying the operation of a nuclear reactor in the framework of the diffusion theory of neutrons.

144. Theoretical Methods in Reactor Analysis

(3) Staff

Discussion of neutron diffusion in various reactor geometrics. Time-dependent treatment of reactors. Multi-group and finite-difference descriptions. Numerical criticality search. Solving nuclear engineering problems via Monte Carlo.

145. Mathematical Methods in Nuclear Engineering

(3) Staff

Prerequisite: Nuclear Engineering 144.

Derivation and classification of the time-dependent neutron diffusion equation. Analytical methods for the solution of the diffusion equation. The mathematical and physical interpretation of the eigenvalue problem in reactor physics. Numerical techniques for the solution of the diffusion equation with variable coefficients. Inner and outer iteration. Student use of prepared computer modules required.

150. Nuclear Power Systems Design

(4) Fenech

Prerequisite: see instructor.

A team of qualified students works together to design and optimize a specified nuclear power system. Basic principles and up-to-date computer codes are used to demonstrate the interplay between safety-economics-reliability.

160. Principles of Controlled Thermonuclear Reactors

(3) Odette

Prerequisite: senior standing in engineering or physical sciences, or consent of instructor.

Fundamentals of controlled thermonuclear fusion reactor technology. Fusion reactions. Elementary plasma theory. Heating and confinement of thermonuclear plasmas. Vacuum and magnet technology. Conceptual designs of reactors, energy conversion methods, blanket neutronics, and tritium breeding. Materials problems.

180. Introduction to Materials

(3) Staff

Prerequisite: upper-division standing in engineering. (Formerly Nuclear Engineering 115.) This course is the same as ME 180.

Introduction to the structure and properties of engineering materials and the principles underlying structure-property relationships. Crystal structure, defects, phase equilibria, diffusion and phase transformation kinetics, mechanical behavior and strengthening mechanisms, and the effects of processing and environment in structure properties.

185. Materials in Engineering

(3) Odette, Lucas

Prerequisite: upper-division standing in engineering or consent of instructor.

Materials science and engineering in the solution to today's complex technological problems. A team of six faculty lectures on various aspects of

this topic, which emphasize applications of materials, material production techniques, and environmental effects on materials.

193. Internship in Industry

(1-3) Fenech, Staff

Prerequisites: prior approval of department, Not more than three units may be used as departmental electives. May be repeated to a maximum of six units.

Special projects for selected students. Offered in conjunction with engineering practice in selected industrial and research firms, under direct faculty supervision.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisite: consent of instructor. Check with department for quarters offered.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular departmental curriculum.

198. Independent Studies in Nuclear Engineering

(1-5) Staff

Prerequisites: consent of faculty. Students must (1) have attained upper-division standing; (2) have a minimum 3.0 grade-point average for the preceding three quarters; (3) have completed at least two-upper division courses in nuclear engineering. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Individual study under a faculty supervisor. This course gives an opportunity to qualified senior students to pursue or initiate some independent experimental or theoretical research.

GRADUATE COURSES**206. Principles of Magnetic Fusion Power**

(3) Odette

Prerequisite: background in engineering or physical sciences.

The physical principles of magnetic and inertial confinement of thermonuclear plasmas. Reaction physics, plasma properties, energy balances, confinement equilibria and stability, charged particle motion, and energy transport. Tokamak, mirror, and inertial confinement schemes. Fusion power plant technology.

211. Electron Microscopy: Theory and Application

(4) Lucas, Staff

The course will briefly cover the basic theory of electron optics and imaging of crystalline solids. Instruction will then be given in the operation and use of a modern TEM/STEM.

215. Materials Science and Engineering Laboratory

(4) Lucas

Prerequisite: Nuclear Engineering 115 or consent of instructor.

Theory and experimental techniques to determine the structure and mechanical behavior of materials are taught and applied to solving engineering problems. Heat treating, metallography, hardness, microhardness, strength and fracture toughness, creep, x-ray diffraction, and electron optics are investigated.

216. Seminar in Materials Research

(2) Odette, Lucas

Prerequisite: consent of instructor. May be repeated.

Seminars on research topics of current interest in the areas of micro-mechanics of materials

phase transformation, irradiation, thermal and chemical effects, and experimental techniques on materials science. Student participation in presentations.

217. Radiation Effects in Structural Materials

(4) Lucas, Odette

Prerequisite: Nuclear Engineering 115, 116, or equivalent.

Review of field of radiation damage to structural materials used in fission and fusion power systems. Fundamental theoretical basis of radiation damage models, experimental data base, and methods of predicting damage to engineering structures are required.

218. Nuclear Fuel Materials Engineering

(4) Lucas

Prerequisite: Nuclear Engineering 10, 115, 116, 130A-B or equivalent, or consent of instructor.

Subjects will include the following: 1) nuclear fuel types; 2) properties of fuel and cladding materials; 3) behavior of fuel materials during steady state and abnormal operations; 4) fabrication processes of some selected fuels; 5) fuel design.

219. Processing of Advanced Ceramic Systems

(2) Lange

Prerequisite: graduate standing.

Basic processing methods: glass ceramic methods, gelation, powder methods. Powders: inorganic precursors, metal organic routes. Colloidal routes to powder preparation and consolidation: slurry consolidation, drying. Densification: sintering thermodynamics and kinetics, particle packing, grain growth and densification. Microstructure development: crystallization, grain growth.

220A-B-C. Advanced Transport Processes

(3-3-3) Staff

Prerequisite: consent of instructor. (Same as course as Chemical Engineering 220A-B-C.)

A study of the basic laws of momentum, energy, and mass transport with emphasis on the prediction of transport rates in chemical and nuclear engineering applications.

222. Topics in Nuclear Safety

(4) Banerjee

Prerequisites: Chemical Engineering 220A-B or equivalent preparation in transport phenomena.

Nuclear safety will be discussed from the viewpoint of the important heat transfer and fluid dynamics phenomena that affect accidents. Analysis of boiling, condensation, and two-phase flow dynamics will be treated in detail.

224A-B-C. Biomedical Engineering

(4-4-4) Profio

Prerequisites: consent of instructor; Nuclear Engineering 111 recommended.

Engineering applied to medicine. Basic physiology, medical terminology. Biomaterials. Thermal and electrical applications. Diagnostic and therapeutic radiology and nuclear medicine. Radiation protection. Laser medicine and surgery. Ultrasound, nuclear magnetic resonance, other diagnostic techniques. Computers in medicine.

230. Nuclear Power Economics

(3) Staff

Prerequisites: Nuclear Engineering 130A-B, 140A-B or equivalent.

Actual and future needs for nuclear power. The various components of nuclear power. Nuclear fuel cycle costs. Nuclear materials utilization.

233A-B-C. Topics in Thermofluids

(3-3-3) Banerjee

Prerequisites: Chemical Engineering 220A-B or equivalent.

Conservation equations and constitutive relationships for multiphase flow, turbulence modeling, boiling, and condensation phenomena, applications to thermalhydraulics problems in the chemical and nuclear industry.

236. Seminar in Thermalhydraulics

(2) Banerjee, Theofanous

Prerequisite: consent of instructor.

Presentation and discussion of different topics in the form of informal seminars. Topics deal with different research aspects in the field of thermalhydraulics.

240. Nuclear Reactor Dynamics

(3) Staff

Prerequisites: Nuclear Engineering 140A-B or consent of instructor.

The neutron physics of reactor kinetics, feedback effects, stability analysis (linear and non-linear).

245. Chemical Nuclear Engineering

(4) Banerjee

Prerequisite: consent of instructor.

The nuclear fuel cycle, uranium resources, production of uranium, uranium enrichment, and fabrication of nuclear fuel; fuel reprocessing; radioactive waste management and isolation.

250. Physical Metallurgy

(4) Odette, Lucas

Prerequisite: consent of instructor.

Relationships between structure and properties of metals; thermodynamics of solids-phase transformations; and defect theory; mechanical behavior-yield, plastic flow, fracture creep and fatigue, strengthening mechanisms, alloy design, composite materials, and radiation effects.

251. Kinetics of Phase Transformations in Materials

(3) Odette

Prerequisite: consent of instructor

Theory of near equilibrium liquid-solid and solid-solid transformations in materials. Classifications and phenomenology; thermodynamics; diffusion; nucleation; growth; transformation kinetics formalism. Examples of heat treatment of steel, precipitation hardening, recovery, and transformation in ceramics.

260. Nuclear Power Systems Design

(4) Fenech

Prerequisite: consent of instructor.

A team work design and optimization of nuclear power system using the latest methods of analysis and currently available computer program.

266. Advanced Fusion Technology

(3) Staff

Prerequisite: Nuclear Engineering 160 or equivalent.

Advanced topics in controlled thermonuclear fusion reactor engineering. Magnetic confinement and laser fusion methods. Energy conversion. Materials and design problems. Recent results from fusion research.

290. Seminar

(1/2) Staff

Presentation of research by outside speakers and graduate students.

594. Special Topics

(1-4) Staff

Special seminar on research subjects of current interest.

596. Directed Reading and Research

(2-4) Staff

A written proposal for each tutorial must be approved by the department chair.

598. Master's Thesis Research and Preparation

(1-12) Staff

Not applicable to course requirements for M.S. degree.

Only for research underlying the thesis and writing the thesis.

599. Dissertation Research and Preparation

(1-12) Staff

Only for research underlying the dissertation and writing the dissertation.

Computer Science

Department of Computer Science, Engineering 2106; Telephone (805) 961-4321. Department Chair: Terence R. Smith.

Faculty

Andre B. Bondi, Ph.D., Purdue University, Assistant Professor (*queueing models of computer communication networks, computer performance evaluation, simulation techniques and operating systems*)

John L. Bruno, Ph.D., The City College of New York, Professor, Center for Computational Sciences and Engineering Director (*applications of digital systems to engineering problems, scheduling theory, networks and graphs*)

Peter R. Cappello, Ph.D., Princeton University, Assistant Professor (VLSI theory, applications and tools, programming languages and systems)

Laura Dillon, Ph.D., University of Massachusetts, Amherst, Assistant Professor (*systems software engineering, programming languages*)

Omer Egecioglu, Ph.D., UC San Diego, Assistant Professor (*bijjective combinatorics, formal languages and combinatorial optimization*)

Teofilo Gonzalez, Ph.D., University of Minnesota, Associate Professor (*analysis of algorithms*)

Richard A. Kemmerer, Ph.D., UC Los Angeles, Associate Professor, Center for Computational Sciences and Engineering Associate Director (*specification and verification of systems, security and reliability, programming and specification language design, software engineering*)

Alan G. Konheim, Ph.D., Cornell University, Professor (*computer communications, computer systems modeling and analysis*)
†Marvin Marcus, Ph.D., UC Berkeley, Professor (*linear and multilinear algebra*)

Prakash Ramanan, Ph.D., University of Illinois (Urbana), Assistant Professor (*analysis of computer algorithms, techniques in computational geometry with applications to VLSI design and robotics*)

Man-Tak Shing, Ph.D., UC San Diego, Assistant Professor (*design and analysis of algorithms, discrete optimization, design automation*)

‡Terence R. Smith, Ph.D., Johns Hopkins University, Professor (*individual decision-making in spatial context; cognitive processes modeling; applications of artificial intelligence in geographical decision-making, spatial databases*)

*Roger C. Wood, Ph.D., UC Los Angeles, Professor (*computer system modeling, design and analysis, computer architecture*)
†Joint appointment with the Department of Mathematics.

*Joint appointment with the Department of Electrical and Computer Engineering.

‡Joint appointment with the Department of Geography.

The Department of Computer Science offers programs leading to the degrees of Bachelor of Arts and Bachelor of Science in computer science. The B.A. is a College of Letters and Science major; the B.S. is a College of Engineering major. Both the B.A. and B.S. degree programs in computer science are accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board.

UCSB has excellent computer facilities. The department has a DEC VAX 11/780 and 12 MicroVax IIs, supporting Berkeley Unix and 21 Sun III work stations for instructional computing. The campus Computer Center has an ITTEL AS/6 (a plug-compatible IBM 370) supporting OS/MVT and Wylbur, an IBM 4341-2 supporting VM and CMS, and two PDP 11/70s supporting Unix. All systems offer interactive computing, text editing, word processing, and computer graphics.

Terminal clusters are located throughout the campus. Terminal rooms in the Engineering Building house Tektronix 4006 graphics terminals, more than 30 other terminals connected directly to the instructional VAX and 32 IBM ATs, and an RJE station. The Computer Systems Laboratory operates three VAXes and 12 MicroVaxes for instruction and research. A microcomputer-based digital design laboratory is available in the Department of Electrical and Computer Engineering. The UCSB Microcomputer Laboratory (MCL) is a general-purpose instructional computing facility equipped with Apple II, Macintosh, and IBM PC and IBM AT computers. The MCL provides instructional computing support to the campus and is the site of extramurally funded and extension-based community outreach programs.

The undergraduate major in computer science has a dual purpose: to prepare students for advanced studies and research and to provide training for a variety of careers in business, industry, and government.

The computer science office handles all questions about courses, substitutions, requirements, and petitions. A department publication, *Undergraduate Studies in Computer Science*, describes degree offerings, new courses, and requirement changes.

Admission to the Major

The pre-major requirements for the B.A. and the B.S. degrees in computer science are the same. Students intending to major in computer science should declare a pre-major when applying for admission to the university. Students who declare a pre-major are responsible for satisfying degree requirements in effect at the time of their declaration. When students have completed the preparation courses, they must petition to declare a change from pre-major to major status.

Undergraduate students enrolled in other majors may petition to enter the pre-computer science major at any time Option A below has been met or they may petition to enter the full major when Option B has been met:

Option A: Satisfactory completion at UCSB of at least four four-unit courses required for the

computer science pre-major (listed below), including at least two in computer science, with a pre-major grade-point average of at least 3.0.

Option B: Satisfactory completion of all the pre-major requirements with a University of California grade-point average of at least 2.75.

Students in other majors are advised that enrollment in most computer science courses is restricted to declared pre-computer science and computer science majors.

Please note: Pre-major status does not guarantee admission to major status. No course required for the preparation may be taken on a passed/not passed basis. To be admitted to the major, the student must complete the preparation with a minimum grade-point average of 2.75.

UNDERGRADUATE PROGRAM

Preparation for the major—B.S. and B.A. Required: Mathematics 3A-B-C, or 7A-B-C, or appropriate portions of 3S; Mathematics 5A, 8, and 11A or 5B; Computer Science 10, 11C, 20, 26, 30; and Probability and Statistics 121A. Courses identified as options within the preparation are considered equivalent; students may take one of them to satisfy the requirement, but may not take more of them for credit.

Bachelor of Science—Computer Science

Upper-division major. The following courses are required: Computer Science 110, 130A-B, 154, 160, 162, 170, 185, 186; Electrical and Computer Engineering 152A; and Probability and Statistics 121B. In addition, at least 16 units of major field electives are required. Prior approval of these electives must be obtained from the faculty adviser. For students who enter UCSB in fall 1986 or later, the following courses are required: Physics 7A-B-C-CL and at least eight units of science, mathematics, and engineering electives. For students who entered UCSB before fall 1986, at least 20 units of science, mathematics, and engineering electives are required. Lists of approved science, mathematics, and engineering electives are available in the computer science office.

Bachelor of Arts—Computer Science

Upper-division major. The courses required for the B.A. are the same as for the B.S. degree, with the following exceptions: Computer Science 162 is not required; seven, rather than 16, units of major field electives are required; and one science elective course is required. A list of approved science electives is available in the computer science office.

Courses required for the pre-major or major, lower- or upper-division, inside or outside of the Department of Computer Science, cannot be taken for the passed/not passed grading option. They must be taken for letter grades.

GRADUATE PROGRAM

Computer science tracks leading to the M.S. and Ph.D. degrees in electrical and computer engineering are available. Interested students should consult the section in this catalog describing the Department of Electrical and Computer Engineering.

COMPUTER SCIENCE COURSES

LOWER DIVISION

1A. Microcomputer Applications Using Commercial Software

(3) Marcus

Prerequisites: Interdisciplinary 5 and at least one statistics course, or consent of instructor. An introduction to the use of microcomputer software packages including word processors, spreadsheet software, database management software, and statistical applications software.

1B. Programming On Microcomputers

(3) Marcus

Prerequisite: Computer Science 1A or Interdisciplinary 5 or consent of instructor.

An introduction to computer programming using two high level languages commonly available on microcomputers: BASIC and PASCAL.

1C. Computer Hardware, Software and Data Structures Concepts

(4) Marcus

Prerequisites: Computer Science 1B or consent of instructor

An introduction to some advanced computer hardware and software concepts from the viewpoint of computer users. Topics include: hardware models, Boolean algebra and circuit design, number systems and internal representation of data, operating systems, various data structures.

5AA-ZZ. Introduction to Computer Programming and Organization

(4) Staff

Prerequisites: Computer Science 5PA is not open for credit to students who have taken Computer Science 10. Computer Science 5FO is not open for credit to students who have taken Engineering 3. Computer Science 5 may be repeated with a different suffix.

Introduction to programming and the organization of computers. Basic programming concepts, algorithms, data and control structures, debugging, program design, documentation, structured programming. Sections are:

5PA-Pascal
5FO-Fortran
5AP-APL
5CO-Cobol
5SN-Snobol
5C-C
5LI-Lisp
5PL-PL/I

10. Introduction to Computer Programming

(4) Staff

Prerequisite: Mathematics 3A or Mathematics 7A.

Introduction to programming and the organization of computers. Basic programming concepts: algorithms, data and control structures, debugging, program design, documentation, structured programming.

11AA-ZZ. Programming Language Laboratory

(1) Staff

Prerequisite: knowledge of at least one programming language. Different sections may be repeated. Sections not always offered. 11C is offered for two units and is for majors only or consent of department.

A self-paced course to allow a student who already possesses a working knowledge of at least one programming language an opportunity

to learn other languages of interest. Each section studies a different language. Sections are:

11PA-Pascal
11FO-Fortran
11AP-APL
11CO-Cobol
11C-C (2 units)
11SN-Snobol
11LI-Lisp
11PL-PL/I
11AD-ADA

20. Programming Methods

(4) Staff

Prerequisite: Computer Science 10, Mathematics 3B or Mathematics 7B.

Programming techniques as follows: specification, representation, and manipulation of basic data structures such as stacks, queues, lists, trees, sets, arrays, etc. Searching and sorting techniques; recursion, string processing.

26. Foundations of Computer Science

(4) Marcus

Prerequisites: Computer Science 20, Mathematics 8 and 11A. For computer science pre-majors only or consent of department.

Basic mathematical concepts: sets, relations, recursive functions, permutations, combinations, recurrence relations, generating functions, graphs, trees. Finite state machines, regular expressions, pushdown automata, Turing machines, BNF, language classes, formal specification and verification, structural induction, efficiency analysis.

30. Introduction to Computer Systems

(4) Staff

Prerequisite: Computer Science 20. Not open for credit to students who have received credit for ECE 15A. For computer science pre-majors only or consent of department.

Basic computer organization; assembly language programming; input-output programming, interrupt handlers.

UPPER DIVISION

110. Numerical Computation

(4) Egecioglu, Marcus

Prerequisites: Mathematics 5A; Mathematics 11A or Mathematics 5B. Open to computer science pre-majors and majors and ECE majors, or consent of department.

Study of computer programs for problems involving matrices, integrals, differential equations, spline functions, zeros and extrema of functions, least squares, and Monte Carlo techniques.

130A-B. Data Structures and Algorithms

(4-4) Gonzalez, Egecioglu

Prerequisites: Computer Science 11C and 26. Open to computer science majors only or consent of department.

The study of data structures and their applications. Correctness proofs and techniques for the design of correct algorithms. Internal and external searching. Hashing and height balanced trees. Internal and external sorting. Memory management; design techniques; divide and conquer; greedy strategies; dynamic programming; backtracking; local search; solution of recurrence relations.

130C. Algorithms for Graph and Network Problems

(4) Cappello

Prerequisites: Computer Science 130A-B. Open to computer science majors only or consent of department.

Design and analysis of nonnumerical algorithms. Topics include: (1) representation of directed

and undirected graphs; (2) directed graph algorithms such as shortest path problems, traversal, dag's strongly connected components, flow problems; and, (3) undirected graphs algorithms such as minimum-cost spanning trees, traversal biconnected components, matching, planarity testing.

140. Software Fabrication

(4) Staff

Prerequisites: Computer Science 11C and 130A-B. Open to computer science majors only or consent of department.

Software engineering's lowest level can be called software fabrication: computer program construction using software tools. Its problems include maintenance ease, portability, efficiency, security, and tradeoffs between compiled vs. interpretive, batch vs. interactive, and printed vs. screen-oriented approaches. Students will explore a large existing system.

154. Computer Architecture

(4) Bondi, Wood

Prerequisites: Computer Science 130A and ECE 152A. Not open for credit to students who have received credit for ECE 154. Open to computer science majors and ECE majors only.

Introduction to the architecture of computer systems. Topics include: central processing units, memory systems, channels and controllers, peripheral devices, interrupt systems, software vs. hardware tradeoffs.

160. Translation of Programming Languages

(4) Kemmerer

Prerequisite: Computer Science 130B. Open to computer science majors only or consent of department.

Structure of translators, assemblers, interpreters, and compilers; scanners, LL parsers, code generation, error processing, diagnostic tools, monitors.

162. Programming Languages

(4) Kemmerer

Prerequisite: Computer Science 130A. Open to computer science majors only or consent of department.

Basic concepts of programming languages: binding, type-checking, storage management, scope of names, extensibility, macro processing, syntax, semantics, pragmatics; analysis and evaluation of programming languages from data- and control-structure points of view.

165. Machine Intelligence

(4) Smith

Prerequisites: Computer Science 11LI — preferably taken prior to Computer Science 165, but may be taken concurrently. Open to computer science majors only or consent of department.

Machine intelligence is concerned with computational techniques for representing and reasoning about complex objects. Topics covered include some of the machine intelligence programming languages, data structures, control structures, and problem solving techniques used in both research and application.

170. Operating Systems

(4) Bruno

Prerequisites: Computer Science 130A and 154. Open to computer science majors, ECE majors only or consent of department.

Basic concepts of operating systems. The notion of a process; interprocess communication and synchronization; input-output, file systems, linking and loading.

172. Software Engineering

(4) Staff

Prerequisites: Computer Science 130A; Computer Science 130B is desirable. Open to computer science majors only or consent of department.

Software engineering is concerned with long-term, large-scale programming projects. Software management, cost estimates, problem specification and analysis, system design techniques, system testing and performance evaluation, and system maintenance. Students will design, manage, and implement a medium-sized project.

174. Data Base Management Systems

(4) Staff

Prerequisites: Computer Science 130B and 170. Open to computer science majors only or consent of department.

Data base systems architecture, network, hierarchical and relational systems; data base languages; data base operational requirements.

175. Introduction to Performance Evaluation

(4) Bondi

Prerequisites: Computer Science 170; PSTAT 121A. Open to computer science majors only or consent of department.

Asymptotic performance bounds. The M/M/1, M/G/1 queues. Objectives of performance modeling and capacity planning. Solution of open, closed, and mixed product form networks by MVA and convolution. The BCMP theorem. Approximate models of non-product form systems, including priority queueing and memory contention.

176. Introduction to Computer Communication Networks

(4) Konheim

Prerequisites: Computer Science 154 or ECE 154. Open to computer science majors only or consent of department.

Topics include: transmission media and methods; switching types; network taxonomy; line control procedures; routing and flow control; line capacity assignment.

178. Introduction to Cryptography

(4) Konheim

Prerequisites: Computer Science 130A. Open to computer science majors only or consent of department.

An introduction to the basic concepts and techniques of cryptography and cryptanalysis. Topics to be covered include: the Shannon Theory, classical systems, the Enigma machine, the Data Encryption Standard, public key systems, digital signatures, file security.

180. Computer Graphics

(4) Bruno

Prerequisites: Computer Science 130B. Open to computer science and electrical and computer engineering majors who are seniors or graduate students, or consent of instructor. This course is the same as ECE 180.

Basic display techniques, display devices, vector generation, display processors; homogeneous coordinates, transformations and clipping; graphic systems, interactive graphics, introduction to curve and surface representations; hidden line and surface elimination algorithms.

185. Automata and Formal Languages

(4) Shing, Ramanan

Prerequisites: Computer Science 11LI; it is recommended that Computer Science 160 be taken before or concurrently with Computer Science 185. Open to computer science majors only or consent of department. Not

open for credit to students who have received credit for Mathematics 150.

Topics include: finite automata and regular expressions properties of regular sets, push-down automata and context-free grammars/languages, Turing machines (deterministic and nondeterministic), undecidable problems, and diagonalization.

186. Theory of Computation

(4) Staff

Prerequisite: Computer Science 185 is recommended as preparation for Computer Science 186. Not open for credit to students who have received credit for Mathematics 151. Open to computer science majors only or consent of department.

Topics include: linear reductions in time and space, deterministic and nondeterministic time and space classes, hierarchy theorems, relations among complexity measures, reducibilities and the classes P and NP.

190AA-ZZ. Special Topics in Computer Science

(1-5) Staff

Prerequisite: consent of instructor. Sections may not be repeated without the consent of the chair.

These variable unit courses provide for the study of topics of current interest in computer science. A: Artificial Intelligence. B: Computer Graphics. C: Pattern Recognition. D: Program Verification. E: Computer Architectures. F: Algorithms and Complexity. G: Mathematical Theory of Computation. H: Semantic Models. I: Software Systems. J: General. K: Computer Systems Modeling and Analysis.

192. Projects in Computer Science

(4) Staff

Prerequisite: consent of instructor. May be repeated once for credit but only four units may be applied to the major.

Projects in computer science for advanced undergraduate students.

193. Internship in Industry

(1-4) Staff

Prerequisites: consent of instructor and department chair. Not more than four units per quarter; not more than four units may be applied as science, mathematics, and engineering electives. May be repeated with faculty/chair approval.

Special projects for selected students. Offered in conjunction with selected industrial and research firms under direct faculty supervision. Prior departmental approval required.

194. Group Studies in Computer Science

(1-5) Staff

May be repeated for credit to a maximum of eight units but only four units may be applied to the major.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular department curriculum.

199A-B-C. Independent Studies in Computer Science

(1-5, 1-5, 1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in computer science. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Computer Science 199A-B is a two-quarter in-progress course with grades for both quarters assigned upon completion of 199B. Computer Science 199C is a one-

quarter course with grade assigned at the end of the quarter.

GRADUATE COURSES

220A-B. Automaton-Based Complexity

(4-4) Staff

Prerequisite: Computer Science 186.

Topics include: models of computation; time and space complexity classes (e.g., P, NP, and PSPACE), efficient reducibilities, complete problems; lower bounds; the polynomial hierarchy

221A-B. Formal Languages

(4-4) Staff

Prerequisite: Computer Science 186.

Topics include: context-free grammars and languages, normal-form theorem, pumping lemma, characterization theorems, language classes, parsing, decision problems.

222. Computability

(4) Staff

Prerequisite: Computer Science 221A. Not open to students who have received credit for Mathematics 253.

Partial and total recursive functions, Godel numberings, recursion theorem, reducibilities, the arithmetic hierarchy, Blum's axioms, union, gap, and speedup theorems; priority arguments.

230A. Design and Analysis of Algorithms (I)

(4) Shing

Prerequisites: Computer Science 130A-B. It is recommended that Computer Science 130C be taken before Computer Science 230A. Not open for credit for students who have received credit for Mathematics 254.

Topics include: rate of growth; local and global optima; linear programming — simplex algorithm, duality, revised simplex method, decomposition principles, the primal-dual algorithm, and the ellipsoid algorithm; advanced techniques in divide-and-conquer, dynamic programming, and branch-and-bound.

230B. Design and Analysis of Algorithms (II)

(4) Shing

Prerequisites: Computer Science 230A. Not open for credit for students who have received credit for Mathematics 254.

Topics include: algorithms and complexity — input size, the classes of P and NP; NP-complete problems; heuristic algorithms — worst- and average-case analysis of the time complexities and error bounds; design and analysis of probabilistic algorithms; efficient algorithms for planar graphs — planarity testing, planar separator theorem and its applications.

250. Computational Aspects of VLSI

(4) Staff

Prerequisites: Computer Science 130B and 186.

Lower bounds on area and time; VLSI models of computation; layout algorithms; algorithm design for VLSI; systolic algorithms; organizations with high wire area; overview of VLSI design systems.

260. Advanced Topics in Translation

(4) Staff

Prerequisites: Computer Science 160 and 162. Not open to students who have received credit for EE/CS 267.

Theoretical aspects of translation. Topics include: parsing algorithms for LR and LL grammars, intermediate code generation, flow analysis, optimization; run-time environments, attributed grammars, error processing.

262. Advanced Topics in Programming Languages

(4) Staff

Prerequisites: Computer Science 160 and 162

Topics include: advanced design language principles; concepts of modern languages; modularity, data abstraction, exception handling, concurrency, genericity, extensibility; methods for the formal description of programming languages; various approaches to formal semantics: operational, denotational, axiomatic, attribute grammars; complimentary definitions.

264. Automated Theorem Proving

(4) Staff

Prerequisites: Computer Science 130A-B; Computer Science 186 or Mathematics 151; consent of instructor.

The seminar will examine applications and user interfaces of automated theorem provers, and will concentrate on basic algorithms and new results in efficient automated proof of formulas. Students will experience existing theorem provers hands-on. Each student will propose and carry out a review of previous work, an implementation of a new algorithm, and a presentation of studies and results.

265. Advanced Topics in Machine Intelligence

(4) Smith, T.

Prerequisite: Computer Science 165 or consent of instructor.

Topics covered include advanced programming techniques for representing and reasoning about complex objects, and various applications of such techniques including expert systems, natural language processors, image understanding systems, and machine learning.

266. Formal Specification and Verification

(4) Kemmerer

Prerequisites: Computer Science 130A-B; Computer Science 186 or Mathematics 151.

This course provides an introduction to existing specification and verification systems, and to the underlying theory and techniques of verifying the correctness of algorithms with respect to specifications. This subject can be considered as the combination of specification and verification techniques, programming language semantics, and formal logic.

270A-B. Advanced Topics in Operating Systems

(4-4) Bruno

Prerequisites: Computer Science 170 and 154.

Implementation of operating systems; process and resource control, storage management, file systems, time-sharing and real-time systems; probability and combinatorial models of computer sequencing and allocation problems.

272. Software Engineering

(4) Staff

Prerequisite: Computer Science 172. Not open to students who have received credit for EE/CS 268.

Principles of software engineering disciplines emphasizing requirements analysis, specification design, coding, testing and correctness proofs, maintenance, and management. Students will use a number of software engineering tools.

274. Advanced Topics in Data Base Management Systems

(4) Konheim

Prerequisite: Computer Science 174.

Data models, semantics and translation; data integrity; data base languages; design and evaluation of storage structures; associative processors; data base design tools and methodology; distributed data bases.

275. Performance Evaluation

(4) Bondi

Prerequisites: Computer Science 170; PSTAT 121A-B; or consent of instructor.

Performance bounds for multiple class systems. Applications of generating functions, Laplace transforms to study of queues. Objectives of performance modeling. Open/closed networks of BCMP queues and solution methods; approximate models of priority queues, simultaneous possession; communication networks, distributed systems.

276. Distributed Computing and Computer Networks

(4) Staff

Prerequisite: Computer Science 270A.

Distributed processing task partitioning, inter-process communication, synchronization, reconfiguration, file allocation, and deadlock problems; computer communication network models, analysis and synthesis.

278. Simulation

(4) Bondi

Prerequisites: Probability and Statistics 121A and Computer Science 130A.

Model formulation and programming for discrete event systems. Considerations in the design and implementation of simulation languages; statistical considerations; design of experiments, random number generation, data analysis.

280. Computer Graphics

(4) Staff

Prerequisite: Computer Science 180.

Selected topics in computer graphics including: advanced display architectures; graphic representations of three-dimensional objects; techniques for achieving visual realism, shadows, antialiasing, and texture; advanced color and lighting models; ray tracing algorithms; stereoscopic projection; contour generation; mapping; metafiles; graphic standards.

290AA-ZZ. Special Topics in Computer Science

(1-5) Staff

Prerequisite: consent of instructor.

These variable-unit courses provide for the study of topics of current interest in computer science. Special topics are coded as follows: A. Artificial Intelligence; B. Computer Graphics; C. Pattern Recognition; D. Program Verification; E. Computer Architectures; F. Algorithms and Complexity; G. Mathematical Theory of Computation; H. Semantic Models; I. Software Systems; J. General; K. Computer Systems Modeling and Analysis.

501. Techniques of Engineering Teaching

(2) Staff

Prerequisite: consent of graduate advisor. This course is required for new teaching assistants, and may be taken only once. No unit credit allowed toward advanced degree.

An initial 1-2 day workshop on teaching techniques followed by practical experience in teaching, video-taping, and meetings with instructional consultation staff to improve techniques.

502. Teaching of Computer Science

(1-4) Staff

Prerequisite: Computer Science 501 or consent of instructor. May be taken concurrently with Computer Science 501. No unit credit allowed toward advanced degree.

Procedures and techniques for teaching computer science gained through actual teaching of lecture courses, leading discussion sections, and/or teaching laboratories. Meetings will be held as needed to discuss problems, methods and procedures.

595AA-ZZ. Group Studies in Computer Science

(1-5) Staff

Prerequisite: consent of instructor. May be repeated for credit if there is no duplication of course content.

Instruction in these variable unit courses may be carried out by lecture, or by laboratory, or by a combination of the two. These courses provide critical review of research in various areas of computer science. See Computer Science 290AA-ZZ for list of topics.

596A-B-C. Directed Research

(2-12, 2-12, 2-12) Staff

Computer Science 596A-B is a two-quarter in-progress course with grades for both quarters assigned upon completion of 596B. Computer Science 596C is a one-quarter course with grade assigned at the end of the quarter. Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a faculty member.

597. Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff

No unit credit allowed toward advanced degree. Enrollment limited to 24 units per examination. Maximum of 12 units per quarter. Instructor is normally student's major professor or chair of doctoral committee. S/U grading. Individual studies for M.S. comprehensive examination and Ph.D. examinations.

598. Master's Thesis Research and Preparation

(1-12) Staff

Prerequisite: consent of graduate advisor. For research underlying the thesis and writing of the thesis.

599. Ph.D. Dissertation Research and Preparation

(1-12) Staff

Prerequisite: consent of chair of student's doctoral committee. Research and preparation of dissertation.

Electrical and Computer Engineering

Department of Electrical and Computer Engineering, Engineering 4121; Telephone (805) 961-2269 or (805) 961-3716. Department Chair: Glenn R. Heibredner. Department Vice-Chair: Jorge R. Fontana.

Faculty

Gerardo Beni, Ph.D., UC Los Angeles, Professor, Technical Director of Center for Robotic Systems in Microelectronics, (*high precision intelligent robotics systems*)
 Steven E. Butner, Ph.D., Stanford University, Assistant Professor (*computer architecture, reliability and computer-aided VLSI design with emphasis on distributed organizations and fault-tolerant structures*)
 †Larry A. Coldren, Ph.D., Stanford University, Professor (*integrated optics and optoelectronics; compound semiconductor devices; single frequency, etched-mirror, and coupled cavity semi-conductor lasers*)
 A. G. Conrad, E.E., Yale University, Professor Emeritus

Nadir Dagli, Ph.D., Massachusetts Institute of Technology, Assistant Professor, (*guided wave components for optical millimeter wave and microwave integrated circuits, solid state microwave and millimeter wave devices*)

Jorge R. Fontana, Ph.D., Stanford University, Professor (*quantum electronics, particularly lasers, interaction with charged particles*)

Allen Gersho, Ph.D., Cornell University, Professor (*communication theory, digital coding of analog signals, digital signal processing*)

Susan Hackwood, Ph.D., Leicester Polytechnic, Professor, Director of Center for Robotic Systems in Microelectronics (*high precision intelligent robotics systems*)

Glenn R. Heibredner, D. Eng., Yale University, Associate Professor (*communication theory, signal processing in radar and digital communication systems; digital image processing*)

Steven M. Horvath, Ph.D., Harvard University, Professor Emeritus

James A. Howard, Ph.D., UC Los Angeles, Professor (*digital system design, educational uses of computing resources, mini- and micro-computer applications and design methodologies, real-time computing*)

Evelyn Hu, Ph.D., Columbia University, Professor, Associate Director of Center for Robotic Systems in Microelectronics (*semiconductor device processing and fabrication*)

Ronald Ittis, Ph.D., UC San Diego, Assistant Professor (*digital spread spectrum communications, spectral estimation and adaptive filtering*)

John P. J. Kelly, Ph.D., UC Los Angeles, Assistant Professor (*dependable fault tolerant systems, software engineering, distributed computing, computer architecture*)

†Herbert Kroemer, Dr. rer. nat., University of Goettingen, Professor (*general solid-state and device physics, heterojunctions, molecular beam epitaxy, compound semiconductor materials, and devices, highest-speed bipolar devices*)

Alan J. Laub, Ph.D., University of Minnesota, Professor (*numerical analysis, mathematical software, computer-aided control system design, and linear and large-scale systems theory*)

Stephen I. Long, Ph.D., Cornell University, Professor (*large-scale integrated circuits, especially high-speed compound semiconductor LSI; compound semiconductor device technology; microwave and millimeter wave devices*)

George L. Matthaei, Ph.D., Stanford University, Professor (*filters and matching structures for millimeter-wave and optical integrated circuits, acoustic-wave devices for electric signal processing, microwave devices, network theory*)

†James L. Merz, Ph.D., Harvard University, Professor, Director of Compound Semiconductor Research Center (*optical properties of semiconductors, defects in solids, ion implantation and laser annealing, integrated optics*)

Sanjit K. Mitra, Ph.D., UC Berkeley, Professor (*active and passive network theory and design, one-and two-dimensional digital signal processing, computer-aided design and optimization*)

Philip F. Ordung, D. Eng., Yale University, Professor (*general device physics, solar cells, charge-coupled devices*)

†Pierre M. Petroff, Ph.D., UC Berkeley, Professor (*semiconductor interfaces, defects, quantum structures*)

Ian B. Rhodes, Ph.D., Stanford University, Professor (*mathematical system theory and*

its applications with emphasis on stochastic control, communication, and optimization problems, especially those involving decentralized information structures)

Bradley D. Riedle, Ph.D., University of Illinois at Urbana-Champaign, Assistant Professor (*adaptive control, especially robustness by using reduced order models, multiple-timescale systems, model reduction using averaging and integral manifold methods*)

Isaac D. Scherson, Ph.D., Weizmann Institute of Science, Israel, Assistant Professor (*associative processors, computer graphics, VLSI, and microprocessor-based design*)

John J. Shynk, Ph.D., Stanford University, Assistant Professor (*adaptive filtering, digital signal processing, communication theory*)

John G. Skalik, D. Eng., Yale University, Professor Emeritus

Glen Wade, Ph.D., Stanford University, Professor (*optical, microwave, and acoustical systems theory and experiments, with emphasis on acoustic imaging; computer processing; enhancement of images; computer image reconstruction*)

†Roger C. Wood, Ph.D., UC Los Angeles, Professor (*computer system modeling, design, and evaluation; instructional use of computers; distributed computing; computer architecture*)

† Joint appointment with the Materials Program.

‡ Joint appointment with the Department of Computer Science.

The Department of Electrical and Computer Engineering offers programs leading to the degree of Bachelor of Science in Electrical Engineering. A wide range of program options, including computer engineering, microwaves, signals and systems, and solid state is offered. The department's undergraduate program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Graduate studies leading to the M.S. and Ph.D. degrees in Electrical and Computer Engineering are offered in four major areas of emphasis: computer engineering; microwaves, optics and acoustics; signals and systems; and solid state. A graduate track, offered in conjunction with the Department of Computer Science, offers programs leading to the M.S. and Ph.D. degrees in Electrical and Computer Engineering with specializations in computer systems modeling and analysis, computer systems architecture, software systems, and computational models, algorithms and complexity.

In addition, the department offers certificate programs for those with a B.S. degree or higher who wish to advance their knowledge in a specific area or to undertake a new area. Approved programs are in the following areas: circuits and signal processing; controls and communication systems; computer engineering; microwaves, optics and acoustics; and solid state.

The undergraduate major in electrical engineering prepares students for a wide range of positions in business, government, and private industrial research, development, and manufacturing organizations. The graduate programs offer educational opportunities at an advanced level, leading at the M.S. level to increased career opportunities in the foregoing positions, and at the Ph.D. level to careers in research and teaching, and positions of professional leadership.

Students who complete a major in electrical engineering may be eligible to pursue a California teaching credential. Interested students should consult the credential adviser in the Graduate School of Education.

Counseling is provided to undergraduates by the assistant to the dean for undergraduate studies in the College of Engineering. Students who plan to change to a major in the department should consult the assistant to the dean. During the last two years, department undergraduate advisers assist students in choosing senior elective courses.

Counseling is provided to graduate students through three academic advisers who oversee the areas of electrical and computer engineering, computer science, and the off-campus program televised to Pt. Mugu. Individual faculty members are also available for help in academic planning.

Laboratory Facilities of the Department

In addition to formal classroom lectures and studies, the department places strong emphasis on the inclusion of laboratory and computational experience in a student's program of study. To support this experience, the department and the campus maintain an extensive complement of relevant laboratory and computational facilities, including the following. Full descriptions of each facility are available from the department.

1. General Undergraduate Teaching Laboratories
2. Electronic Systems Laboratory
3. Communications Laboratory
4. Control Systems Laboratory
5. Computer Laboratory and Departmental Computing Facilities
6. Digital Systems Laboratory
7. Microwave Laboratory
8. Optical and Acoustical Systems Laboratory
9. Robotics Laboratory
10. Signal Processing Laboratory
11. Solid State Laboratory, including
 - (a) Si Device and Integrated Circuits
 - (b) Ion Implantation
 - (c) Molecular Beam Epitaxy
 - (d) Optoelectronic Devices

UNDERGRADUATE PROGRAM

Bachelor of Science—Electrical Engineering

Admission to the major. Admission to the lower-division pre-major does not guarantee admission to upper-division major status. The department cannot accept all qualified pre-majors and transfer applicants into the upper-division major, and in the interest of maintaining a quality program seeks the best qualified applicants. Those pre-majors who (1) complete 90 units including all pre-major requirements in the two academic years following admission as freshmen, and (2) compile a cumulative grade-point average exceeding 2.85 during their first five quarters will be admitted to upper-division major status. All other applicants will be considered on a competitive basis. Applications for admission to upper-division major status must be received in the Office of the Assistant to the Dean no later than the end of the second week of spring quarter of the sophomore year.

Preparation for the major. All undergraduate majors in the department are required to meet a set of minimum unit and grade-point requirements and a set of General Education requirements which are common to all undergraduate majors in the College of Engineering. In addition, required preparation for the major consists of the following lower-division courses (or their

equivalents if taken elsewhere): Engineering 3; Electrical and Computer Engineering 2A-B-C and 15A; Chemistry 1A-B-C and 1AL-BL-CL; Mathematics 3A-B-C and 5A-B-C; Physics 7A-B-C-D and 7CL-DL (Physics 1, 2, 3, 4, and 5 are acceptable alternates.)

The Assistant to the Dean can suggest a recommended study plan for electrical and computer engineering freshmen and sophomores. Each junior is assigned a departmental undergraduate adviser who must be consulted in planning the junior and senior year programs.

Upper-division major. The upper-division requirements consist of a set of required courses plus a minimum of 28 units of additional departmental elective courses selected from a wide variety of specialized courses. All departmental elective programs must contain at least two sequences, each consisting of two or more related courses. Required upper-division courses for the major are: Electrical and Computer Engineering 130A-B, 134, 137, 139, either 105 or 140, and one engineering science course from outside the department. A list of acceptable engineering science courses is available from the Assistant to the Dean of Engineering.

The required 28 units of departmental electives are taken primarily in the senior year, and they permit students to develop depth in specialty areas of their choice. The student's elective course program must be approved by his/her departmental undergraduate adviser. The adviser will check the program to insure satisfaction of the departmental requirements of depth, breadth, engineering science, and engineering design. A wide variety of elective programs will be considered acceptable. Sample programs include those with emphasis in solid state, in microwaves and communications, in signals and systems, and in computer engineering.

Two matters should be noted: (1) Students who fail to attain a grade-point average of at least 2.0 in the major may, at the option of the department chair, be denied the privilege of continuing in the major. (2) A large majority of electrical and computer engineering courses have prerequisites which must be completed successfully. Students will not be permitted to take any ECE course if they received a grade of F in one or more of its prerequisites.

Internship in Industry (I³) Program

The Internship in Industry (I³) program (ECE 193 and 293) provides an opportunity for students to combine industrial experience with academic work. Students in the I³ program combine academic study at UCSB with two or three summers of work at one of the participating industrial or governmental organizations. In addition to receiving financial support during their work assignments, students have the opportunity to relate classroom principles to engineering problems in industry while earning academic credit for their industrial work.

GRADUATE PROGRAM

Admission

The department offers graduate programs at the M.S. and Ph.D. levels in electrical and computer engineering, including a concentration in computer science. In addition, the department offers a certificate program in electrical and computer engineering for practicing engineers who do not wish to enroll in a full degree program. The graduate programs are open to those who have a bachelor's degree in electrical engineering, computer engineering, computer science, other areas of engineering, or in mathematics, physics, or other related fields of science. Applicants with degrees in fields other than electrical and

computer engineering or computer science may be required to complete undergraduate prerequisite courses. Fundamental subject areas required include mathematics through differential equations and advanced calculus, a full year of college-level physics, and introductory computer programming.

All applicants for admission to graduate status are required to present evidence of a high level of technical skill, scholarship, and aptitude for electrical and computer engineering. This evidence normally is provided through a combination of undergraduate transcripts, scores on the verbal, quantitative, and analytical sections (required) and advanced portion (optional) of the Graduate Record Examination, letters of recommendation, and accounts of professional experience. A minimum TOEFL (Test of English as a Foreign Language) score of 560 is required of all international applicants.

Admission to the Ph.D. program ordinarily is restricted to those who already hold a master's degree or its equivalent in either electrical and computer engineering or computer science or related fields, and who demonstrate unusual ability and promise for professional success. Some applicants of exceptional promise may be admitted to the Ph.D. program directly on completion of a baccalaureate degree program.

Master of Science—Electrical and Computer Engineering

Degree Requirements

Graduate studies toward the M.S. degree are administered under either Plan 1, which requires course work and a thesis, or Plan 2, which requires course work and a comprehensive examination. Under either plan, students are required to complete at least 42 units of course work approved by the faculty adviser and the departmental graduate adviser. Under either plan, M.S. degree students must select a program of courses forming a coherent pattern directed toward an educational objective, including both depth in a particular area of emphasis and breadth through other course offerings. M.S. students must plan their program of study around one of the four areas of graduate emphasis: computer engineering; microwaves, optics, and acoustics; solid state; and signals and systems.

Plan 1. The student is required, as part of the overall 42-unit requirement, (1) to complete 34 units, no more than 12 of which can be at the undergraduate level, and (2) to submit an acceptable thesis based on research carried out under eight units of ECE 598. Information about acceptable courses is available from the graduate adviser.

Plan 2. The student is required (1) to complete 42 units, no more than 16 of which can be at the undergraduate level, and (2) to pass a comprehensive examination. Further details are available from the graduate adviser.

Doctor of Philosophy—Electrical and Computer Engineering

Degree Requirements

Immediately upon admission to studies toward the Ph.D. degree, students are required to develop a formal study plan which includes both (1) an appropriate level of course work and special studies to provide depth of knowledge in a specialty area, and (2) additional course work in two technical areas that are distinct from the specialty area. The study plan must be approved by the faculty adviser and the department graduate adviser and may be modified during the course of the student's program. Seventy-two units of graduate work beyond the bachelor's degree, or

the equivalent self-study, are normally considered sufficient to meet the depth and breadth requirements for the Ph.D. degree. There are no foreign language requirements in the program.

All students in the Ph.D. program are required to pass the departmental preliminary screening examination. When the examination is passed, the student selects a Ph.D. committee. This committee administers an oral qualifying examination at such time as it deems the student to be adequately prepared and the university residence requirements have been satisfied. After the oral examination has been passed, the student is eligible for advancement to candidacy for the Ph.D. degree.

Students must prepare a dissertation based on original research in a subject area approved by the Ph.D. committee. The dissertation must be defended in an open oral dissertation defense examination.

Certificate Program—Electrical and Computer Engineering

For completion of the certificate program, students are required to take and pass five courses with at least a 3.0 grade-point average. Three of these courses must be at the graduate level, and all courses must be taken for a letter grade. Courses specifically required of undergraduate majors cannot be included for credit. Students must complete the requirements for a certificate in three years from the date of admission to the program. Suitable courses within each of the five approved programs are listed below. Students who wish to use courses not listed in this section must secure the approval of the department graduate adviser in advance.

Courses suitable for a certificate in circuits and signal processing:

ECE 130C, ECE 140, ECE 145A-B-C, ECE 147B, ECE 149, ECE 150, ECE 152A-B-C, ECE 158, ECE 169, ECE 178, ECE 201D, ECE 202A-B, ECE 208A-B-C, ECE 230A-B, ECE 237, ECE 238A-B, ECE 242, ECE 258, ECE 259, ECE 271A-B, ECE 278.

Courses suitable for a certificate in control and communication systems, bioengineering:

ECE 140, ECE 145B, ECE 146A-B, ECE 147A-B, ECE 148, ECE 149, ECE 150, ECE 152A-B-C, ECE 158, ECE 169, ECE 170, ECE 205A, ECE 230A-B, ECE 240A-B, ECE 241, ECE 242, ECE 243, ECE 247A-B-C, ECE 258, ECE 269, ECE 270A-B-C, ECE 271A-B.

Courses suitable for a certificate in computer engineering:

ECE 150, ECE 152A-B-C, ECE 154, ECE 158, ECE 169, ECE 178, ECE 180, ECE 203, ECE 224A-B, ECE 231, ECE 250, ECE 252A-B-C, ECE 256, ECE 257, ECE 258, ECE 259, ECE 269, ECE 277B, ECE 278, ECE 279, ECE 280, ECE 281, CMPSC 130A-B, CMPSC 162, CMPSC 170, CMPSC 172, CMPSC 174, CMPSC 175, CMPSC 176, CMPSC 180, CMPSC 260, CMPSC 262, CMPSC 270A-B, CMPSC 272, CMPSC 274, CMPSC 276, CMPSC 278, CMPSC 280

Courses suitable for a certificate in micro-waves, optics, and acoustics:

ECE 144A-B, ECE 145B-C, ECE 201A-B-C-D, ECE 202A-B, ECE 208A-B-C, ECE 211A-B, ECE 212, ECE 226A-B-C, ECE 260A-B, ECE 594H, ECE 595G, Physics 141, Physics 253.

Courses suitable for a certificate in solid state:

ECE 160B-C, ECE 161A-B, ECE 211A-B, ECE 212, ECE 215, ECE 220A-B-C, ECE 221A-B, ECE 222, ECE 223, ECE 224A-B, ECE 226A-B-C, ECE 260A-B, Physics 123A-B.

Master of Science—ECE with emphasis in Computer Science

Admission

In order to be admitted to graduate study in computer science, applicants must fulfill the general requirements for graduate study noted above and should hold a bachelor's degree or its equivalent in computer science, computer engineering, electrical engineering, mathematics, or some other scientific discipline. Undergraduate preparation must include the following topics: introductory computer architecture and programming; data structures and algorithms; translation in programming languages; programming languages; operating systems; logic design and switching theory; and mathematics, including calculus, linear algebra, elementary probability, and discrete mathematics. Students admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses; a list of such courses is available from the graduate adviser.

Graduate Record Examination scores on the quantitative, verbal, and analytical sections are required for admission. A minimum TOEFL (Test of English as a Foreign Language) score of 560 is required of all international applicants.

Degree Requirements

The M.S. degree program with emphasis in computer science is administered under Plan 1, which requires course work and a thesis, or Plan 2, which requires course work and a comprehensive examination.

Plan 1. The student must complete at least 42 units of course work approved by the thesis adviser and the computer science graduate adviser, and a thesis. Details about acceptable courses and fulfillment of the thesis requirement are available from the graduate adviser.

Plan 2. The student must complete 42 units of course work approved by the computer science graduate adviser and pass a comprehensive examination. Details about acceptable courses and about the examination are available from the graduate adviser.

Doctor of Philosophy—ECE with emphasis in Computer Science

Degree Requirements

Students in the Ph.D. program are required to submit a program of study to the faculty adviser and the computer science graduate adviser. The program must provide depth of knowledge in a major field and breadth of knowledge in two minor fields. While there is no formal unit requirement for the Ph.D., a program of 72 units is normally considered sufficient to meet breadth and depth requirements. There are no foreign language requirements in the program.

The following examinations are required for a Ph.D. degree in computer science: (1) preliminary screening examination; (2) major field examination; (3) minor field requirements; (4) oral qualifying examination; and (5) final dissertation defense examination. Full details about each examination are available from the computer science graduate adviser.

ELECTRICAL AND COMPUTER ENGINEERING COURSES

Many of the ECE courses are restricted to ECE majors only. Please check the quarterly Schedule of Classes. Instructor and quarter offered are subject to change.

LOWER DIVISION

2A-B-C. Circuits, Devices, and Systems (4-4-4) Wade

Prerequisites: Physics 7B, Mathematics 3A-B-C, or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

1. Circuits: natural response, forced response, complete response, sinusoidal steady state, theorems. 2. Electronic devices: principles, linear models, amplifiers, transformers. 3. Systems: feedback, instrumentation. 4. Digital electronics. 5. Laboratory: experimental evaluation of circuits, devices, and systems. Introduction to instrumentation. (F,W,S)

Engineering 3. Computer Solutions of Engineering and Science Problems (3) Staff

Prerequisites: Mathematics 3A, can be taken concurrently. Limited to lower-division majors in engineering, or consent of instructor. Not open to students who have completed Computer Science 5FO.

Application of computers to engineering and scientific problems. Provides working knowledge of FORTRAN language programming, using a structured FORTRAN compiler. Students will use the computer. (F)

6A-B. Circuits and Electronics (3-3) Staff

Prerequisites: Physics 7B, Mathematics 3A-B-C, or consent of instructor. For 6B, 6A is required. Open to engineering majors except ECE and pre-ECE. Lecture, 2 hours; laboratory, 3 hours.

Introduction to basic electrical circuits and electronics. Includes Kirchhoff's laws, network responses, power distribution, diodes, transistor circuits, analog computation, and instrumentation. (W,S)

15A. Introduction to Computer Organization (4) Butner

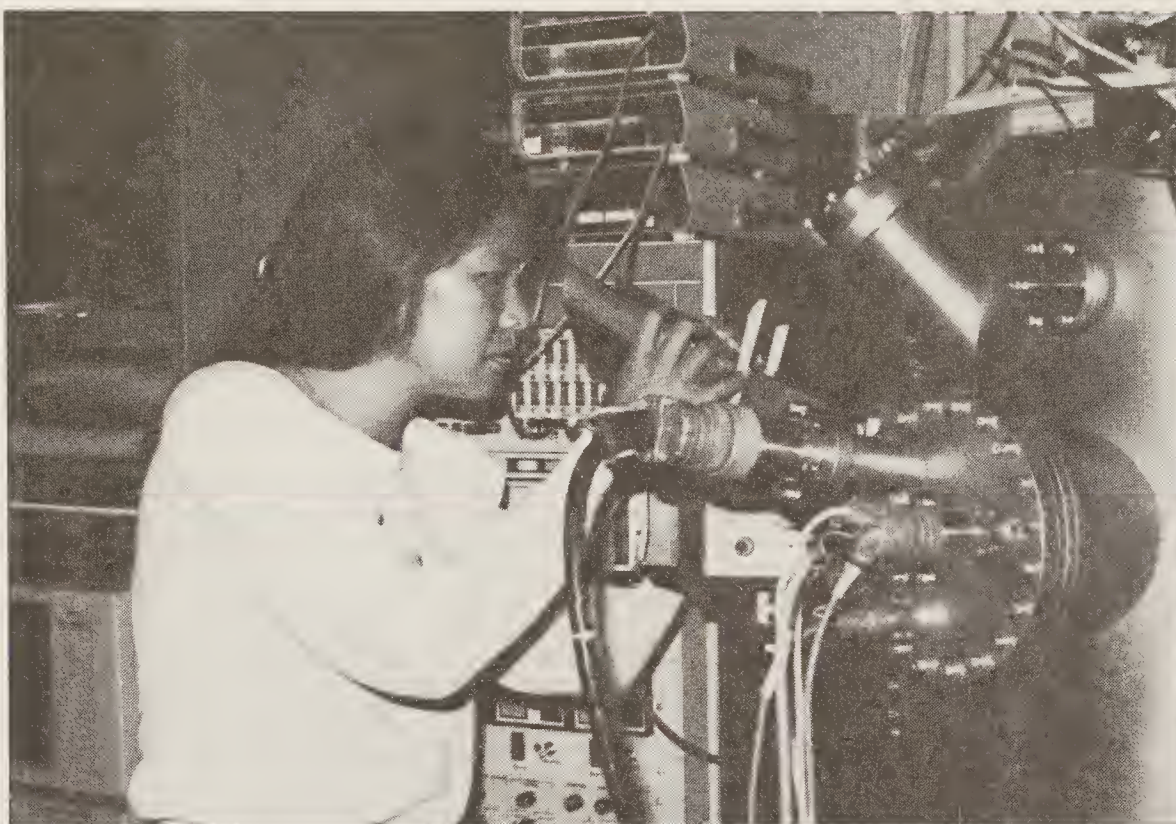
Prerequisites: Engineering 3 or equivalent. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

Digital computer organization and introduction to hardware and software concepts. Digital logic circuits, integrated circuits, and digital functions. Data representation. Register transfer, microoperations. Basic computer organization. Elements of computer software: assembly language programming, subroutines, I/O programming, interrupt processing, and aspects of systems programming. (S)

15B. Microcomputer Architecture, Organization, and Programming (4) Howard

Prerequisite: ECE 15A or 105A, Computer Science 30, or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Study of the internal organization and architecture of microcomputers with emphasis on representative microcomputer systems such as the Intel 8080A and Motorola 6800. Microcomputer



Professor Evelyn Hu observes crystal growth taking place inside a molecular beam epitaxy machine, where entirely new materials can be assembled atom by atom. The apparatus works by beaming molecules toward a template of a single-crystal substrate upon which the new material is constructed.

assemblers and assembly language programming. Software development for microcomputers: program design, coding, debugging, testing, and documentation. (W)

UPPER DIVISION

Engineering 100. Engineering Economic Analysis

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,S)

Engineering 101. Ethics in Engineering

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

The nature of moral value, normative judgment and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (W)

Engineering 103. Technical Writing

(2-3) Staff

Prerequisite: upper-division standing in College of Engineering or consent of instructor.

Writing and editing a variety of technical forms such as reports, articles, abstracts, and proposals. (Third unit awarded for additional writings.) (F, W, S)

105. Statistical Thermodynamics

(4) Hu

Prerequisites: Chemistry 1C, Mathematics 5C, Physics 7D, or equivalents; ECE 134. Lecture, 4 hours.

Statistical distribution of energy. Nature of thermal equilibrium, definition of temperature and entropy. Heat and work. Partition functions. Free energy. Chemical potential. Applications: electrons in semiconductors; radiation, electrical

noise, lasers; Carnot limits to energy conversion efficiencies; alloys. (S)

107A-B-C. Directed Research

(1-4) Staff

Prerequisites: consent of instructor. Acceptable for departmental senior electives by petition only. ECE 107A-B-C may be repeated to a maximum of 12 units.

Directed research projects open to qualified undergraduates in electrical engineering or related fields. Research projects are to be arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. (F,W,S,SS)

113. Systems Analysis and Information System Design

(4) Staff

Prerequisite: Engineering 3 or Mathematics 6A or Sociology 109A or equivalent; or consent of instructor. This course is the same as Sociology 113. Lecture, 3 hours.

Introduction to principles and techniques involved in the analysis of information-processing requirements of large-scale organizations and the design and development of computer-based information systems. Includes overview of implementation, control, and evaluation phases of system development. (S)

115. Computer-Aided Instruction Systems

(4) Howard, Wood

Prerequisite: senior standing or consent of instructor. (This course is the same as Sociology 115). Lecture, 3 hours.

For students who plan to utilize computers as teaching tools. Computer fundamentals, developing skill in a programming language. Programming techniques with applications to educational problem-solving strategies. Techniques of utilizing the computer to assist in providing individualized instruction. CAI history, modes, languages, software, and hardware requirements. Methods of developing course-ware. Economics of CAI systems.

130A-B-C. Signal Analysis and Processing

(4-4-4) Rhodes

Prerequisites: Mathematics 5A-B. Lecture, 3 hours; discussion, 2 hours.

Analysis of discrete- and continuous-signal linear systems using Fourier, Laplace, and Z-transform methods. (F,W,S)

134. Introductory Field Theory

(4) Fontana

Prerequisites: Physics 7C or equivalent, Mathematics 5C, and consent of instructor. Lecture, 3 hours; discussion, 2 hours.

Electric and magnetic field concepts and laws. Fundamentals of vector analysis. Dipoles, properties of materials, energy, Maxwell's equations. Laplace, Poisson, and wave equations, and methods for their solution. Plane waves. (F)

136C. Digital Electronics

(4) Staff

Prerequisites: ECE 137 or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

This course will provide an introduction to electronic circuits used in digital systems. It will consist of a study of device switching characteristics, basic active logic circuits, IC logic families, sequential and combinatorial logic circuits with emphasis on general operating principles. (S)

137. Electronics

(4) Staff

Prerequisites: ECE 2A-B-C and ECE 139. ECE 2C can be taken concurrently. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

Single stage and multistage transistor circuits will be analyzed and designed. Techniques for biasing, estimation of small-signal gain and frequency response, and the applications of feedback will be presented. Introduction to computer-aided design of electronic circuits. (S)

139. Network Theory

(4) Fontana

Prerequisites: ECE 2C and ECE 130A. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

Analysis and design of linear electric networks using time- and frequency-domain methods and computer techniques. (W)

140. Probabilistic Methods of Signal and System Analysis

(4) Iltis

Prerequisite: ECE 130A, B, or consent of instructor. Lecture, 3 hours; discussion, 1 hour Fundamentals of probability, random variables, random processes, spectral analysis, signal analysis in linear systems with random excitation. (F,S)

144A-B. Electromagnetic Fields and Waves

(3-3) Dagli

Prerequisite: ECE 134 or equivalent, or consent of instructor. Lecture, 2 hours; laboratory, 3 hours.

Waves on transmission lines, Maxwell's equations, mathematical techniques for dynamic fields, skin effect, propagation and reflection of electromagnetic waves in materials with different electrical properties, waveguides, resonant cavities, and antennas. Microwave and optical device examples. Selected experiments. (W,S)

145A. Large-Signal Electronics

(5) Staff

Prerequisites: ECE 136A-B, or ECE 137, or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 6 hours. A study of semiconductor electronic circuits with emphasis on the analysis and design of large-

signal amplifiers, oscillators, and wave-shaping circuits. (F)

145B. Communications Electronics

(5) Heidbreder

Prerequisites: ECE 145A or consent of instructor. For ECE majors only. Lecture, 3 hours; laboratory, 6 hours.

The analysis and design of solid-state communication circuits. Topics covered will include RF and IF amplifiers, AGC circuits, mixers, and demodulators. (W)

145C. Special Topics in Electronics

(4) Staff

Prerequisites: ECE 145B or consent of instructor. Open to ECE majors only. Lecture, 2 hours; laboratory, 6 hours.

Selected topics of current interest in analog electronics. The specific areas covered will vary with class interests. (S)

146A. Analog Communication Theory and Techniques

(4) Heidbreder

Prerequisites: ECE 130A-B-C, ECE 140, or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours. Modulation theory. AM, FM, PM, and analog pulse modulation and demodulation techniques. Noise models in electronic circuits. System noise and performance calculations. (W)

146B. Digital Communication Theory and Techniques

(4) Iltis

Prerequisites: ECE 130A-B-C, ECE 140, ECE 146A, or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours.

The quantitative measure of information. Introduction to the fundamental theorems of information theory and their implications in system design. Quantization and coding. Pulse code modulation (PCM). Matched filters, PCM modems, elementary decision-theory concepts. Concepts of error detection and correction. Coded PCM systems. Feedback communication systems. (S)

147A. Feedback Control Systems Theory and Design

(4) Riedle

Prerequisites: ECE 130C or equivalent, or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours. Criteria for feedback systems design — frequency-domain and time-domain specifications. Design techniques for feedback systems. Direct synthesis methods. Computer-aided design methods; automated design methods. (F)

147B. Digital Control Systems Theory and Design

(4) Riedle

Prerequisites: ECE 147A or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 3 hours. State space description of linear systems. Controllability, observability, pole assignment, observers. Techniques for the analysis and design of digital control systems. (W)

148. Signal Processing Laboratory

(3) Gersho

Prerequisites: ECE 149, ECE 158.

Discussion, 1 hour; laboratory, 6 hours.

Experiments in analog and digital filter design; analog and digital signal processing, conditioning; analog-digital conversion using integrated circuits. (S)

149. Active and Passive Network Synthesis

(4) Staff

Prerequisites: ECE 136A-B and ECE 139A-B or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

This course combines the areas of electronics and network theory in the subject of passive and active network design. Topics include passive synthesis, optimization techniques, approximations to ideal filters, distributed networks, sensitivity and the modern design techniques and applications of active filters. (F)

150. Continuous System Simulation

(4) Wood

Prerequisites: Mathematics 5A or equivalent, ECE 2A-B-C or consent of instructor. Lecture, 3 hours; laboratory, 3 hours.

An introduction to the simulation of continuous systems via analog, hybrid, and digital computation. Relative advantages and disadvantages of analog/hybrid/digital techniques. Application to typical engineering problems in dynamics, controls, and systems optimization. (S)

152A. Logic Design and Switching Theory

(5) Wood

Prerequisites: ECE 15A or Computer Science 30 or consent of instructor. Fall quarter: open to ECE majors only. Winter and spring quarters: open to all engineering majors and to Letters and Science Computer Science majors. Lecture, 3 hours; laboratory, 6 hours.

Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits, synchronous and asynchronous operation; state minimization, hazards, and races. (F,W,S,SS)

152B. Digital System Design I: Design Methodologies

(5) Howard

Prerequisites: ECE 152A or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 6 hours.

Design methodologies of digital systems, the register and processor levels. Design of functional subsystems, including arithmetic processors, hardwired and microprogrammed control units, memory systems, and bussing systems. System organization including communication, input/output systems, and multiple CPU systems. (W)

152C. Digital System Design II: Microcomputer-Based Design

(5) Howard

Prerequisites: ECE 152B and ECE 15B, or consent of instructor. Open to ECE majors only. Lecture, 3 hours; laboratory, 6 hours.

Merits of microcomputer-based design. Microcomputer registers and data manipulation. Microcomputer hardware including processor, memory, and I/O support devices. Microcomputer system concepts; memory mapping, interrupts, DMA, I/O systems, and multiple microsystems. Hardware and software development procedures. Application examples. (S)

154. Introduction to Computer Architecture

(4) Butner

Prerequisites: ECE 152A or consent of instructor. Open to ECE and Computer Science majors only. Lecture, 4 hours.

Computer architecture representation methods. Classical processor/memory/switch aspects of computer architecture; instructions, addressing, interpretation and control, I/O systems, and memory hierarchies. Aspects of systems architecture: protection mechanisms and hardware

aids to supervision, specialized processors, and multi-processor/computer systems. Evaluation methods and system analysis. (F,W)

158. Digital Signal Processing

(4) Mitra

Prerequisites: ECE 130A-B-C, or consent of instructor. Mathematics 124A is recommended but not required. Lecture, 3 hours; discussion, 1 hour.

Discrete signals and systems, convolution, z-transforms, discrete Fourier transforms, digital filters. (F)

160B-C. Solid-State Device Electronics

(3-3) Staff

Prerequisite: senior standing or consent of instructor. Lecture, 2 hours; laboratory, 3 hours.

Theory, design, and fabrication of solid-state devices. Includes thin-film components, semiconductor diodes, transistors, MOS-FETs, integrated circuits, MNOS memory devices, and CCDs. (F,W)

161A. Electronic Materials

(4) Kroemer

Prerequisites: ECE 130A-B, 134, 137, 105. ECE majors only or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Electrons as particles and as waves. Atomic structure and periodic table. Bonds. Free electrons in metals. Energy bands. Semiconductors. Semiconductor devices. Dielectric materials. Magnetic materials. Lasers. Superconductors. (F)

161B. Optoelectronic Materials and Devices

(4) Merz

Prerequisite: ECE 161A. Lecture, 3 hours; discussion, 1 hour.

Optical transitions in solids. Direct and indirect gap semiconductors. Luminescence. Excitons and photons. Fundamentals of optoelectronic devices: semiconductor lasers, LED's photoconductors, solar cells, photo diodes, modulators. Photoemission. Integrated optics. (W)

169. Introduction to Computer and Communication Networks

(4) Staff

Prerequisites: ECE 154 or consent of instructor. Not open to students who have taken CMPSC 176. Lecture, 4 hours.

Network topology and architecture. ISO reference model. Protocols on physical link and network layers. Telecommunication subnet. Routing. Congestion. Polling. Multiplexing and concentration. Block and cyclic codes. Satellite and radio networks. Poisson distribution. Circuit, message, and packet switching. Local networks.

170. Introductory Biomedical Engineering

(3) Horvath

Prerequisites: senior standing in engineering. Not open to students who have completed Engineering 170. Lecture, 3 hours.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc. (W)

178. Fundamentals of Computer Image Processing

(4) Staff

Prerequisites: ECE 15A and ECE 130A-B, or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Basic concepts in image processing. Techniques, capabilities, and limitations with emphasis on use of digital computer but also of optical and analog systems. Image sampling, reconstruction, enhancement, restoration, data extraction, and coding. Some hands-on laboratory experience is offered. (W)

180. Computer Graphics

(4) Scherson

Prerequisite: Computer Science 130B. Same as Computer Science 180. Lecture, 3 hours; laboratory, 1 hour.

Basic display techniques, display devices, vector generation, display processors; homogeneous coordinates, transformations and clipping; graphics systems; interactive graphics; introduction to curve and surface representations; hidden line and surface elimination algorithms. (Not offered 1987-88.)

181A. Introduction to Robotics: Robot Mechanics

(4) Kokkinis

Prerequisites: ME 163A; ECE 147A-AL or ME 155A-AL; or consent of instructor.

Prerequisites may be taken concurrently. This course is the same as ME 170A. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot kinematics and dynamics. Structure and operation of industrial robots. Robot performance: workspace, velocity, precision, payload. Comparative discussions of robot mechanical designs. Actuators. Robot coordinate systems. Kinematics of position. Dynamics of manipulators. (F)

181B. Introduction to Robotics: Robotic Sensing

(4) Hackwood

Prerequisite: ECE 181A or ME 170A; or consent of instructor. ECE 178 recommended. This course is the same as ME 170B. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot sensing technology. Mechanical, acoustic, thermal, electric, magnetic, optical and chemical sensors. Characteristics of sensor devices. Emphasis on visual sensors. Description, recognition, and understanding of images. Design emphasis on integrating different types of sensors on one robot or robot system. (W)

181C. Introduction to Robotics: Robot Control

(4) Beni

Prerequisites: ECE 181A or ME 170A; ECE 181B or ME 170B; and ECE 147B-BL; or consent of instructor. This course is the same as ME 170C. Lecture, 3 hours; laboratory, 3 hours.

Overview of robot control technology from open-loop manipulators and sensing systems, to single-joint servovalves and servomotors, to integrated adaptive force and position control using feedback from machine vision and touch sensing systems. Design emphasis on accurate tracking accomplished with minimal algorithm complexity. (S)

192. Projects in Electrical and Computer Engineering

(4) Staff

Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Discussion, 2 hours; laboratory, 6 hours.

Projects in electrical and computer engineering for advanced undergraduate students. (F,W,S,SS)

193. Internship in Industry

(1-8) Staff

Prerequisites: 3.0 grade point average or consent of instructor. Prior departmental approval needed. Not more than four units may be used as departmental electives. May be repeated to 12 units.

Special projects for selected students. Offered in conjunction with engineering practice in selected industrial and research firms, under direct faculty supervision. (F,W,S,SS)

194AA-ZZ. Group Studies in Electrical and Computer Engineering

(1-5) Staff

Prerequisite: consent of instructor.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular departmental curriculum. Topics covered by these group studies are coded as follows: A. Circuits. B. Systems Theory. C. Communications Systems. D. Control Systems. E. Signal Processing. F. Solid State. G. Fields and Waves. H. Quantum Electronics. I. Microwave Electronics. J. Switching Theory. K. Digital Systems Design. L. Computer Architecture. M. Computer Graphics. N. Pattern Recognition. O. Microprocessors and Microprocessor-based Systems. P. Simulation. Q. Imaging Systems and Image Processing. R. General. S. Speech. T. Robot Control. (Check with department for quarters offered.)

199. Independent Studies in Electrical and Computer Engineering

(1-5) Staff

Prerequisite: consent of instructor. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in electrical and computer engineering. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Directed individual study, normally experimental. (F,W,S,SS)

GRADUATE COURSES**201A-B. Electromagnetic Theory**

(3-3) Dagli, Mathaei

Prerequisite: ECE 144A-B or equivalent. Lecture, 3 hours.

Fundamental theorems and techniques for treatment of electromagnetic boundary value and radiation problems. Perturbational, variational, and computer-numerical methods, with microwave engineering examples. (F,W)

201C. Antennas

(3) Matthaei

Prerequisites: ECE 144A-B or equivalent, or consent of instructor. Offered in alternate years with ECE 201D. Lecture, 3 hours.

Classical and computer-numerical methods for analysis and design of antennas. Single-element antennas, antenna arrays and analysis of mutual-impedance effects, aperture antennas, and frequency independent antennas. (S)

201D. Microwave Circuits

(3) Matthaei

Prerequisites: ECE 144A-B. ECE 144B may be taken concurrently. Offered in alternate years with ECE 201C. Lecture, 3 hours.

Field and circuit theory applied to waveguide and transmission-line networks. Analysis of discontinuities and couplings, resonators, filters, and directional couplers. Fundamental limitations for wideband impedance matching, design

techniques for optimum wideband coupling structures for solid-state (and other) devices. (Not offered 1987-88.)

202A. High-Frequency Transistor Circuits

(4) Staff

Prerequisites: ECE 136A-B or consent of instructor. Offered in alternate years. Lecture, 3 hours; design project, 1 hour.

Techniques for the design of transistor circuits at high frequencies. Topics include transistor high-frequency figures of merit, stability factors, the Linvill design technique, and the use of scattering parameters in amplifier design. (F)

202B. Microwave Solid-State Electronics

(4) Staff

Prerequisite: ECE 202A or consent of instructor. Offered in alternate years. Lecture, 3 hours; discussion, 1 hour.

Selected topics in microwave electronics such as parametric amplifiers, tunnel diode amplifiers, frequency multipliers, transferred electron devices, and IMPATT and TRAPATT devices. (W)

203. Introduction to Queuing Theory

(4) Wood

Prerequisite: ECE 140 or consent of instructor. Lecture, 4 hours.

Discrete- and continuous-time Markov chains, birth-death processes, birth-death queuing systems in equilibrium, Markovian queues in equilibrium; results from M/G/1, G/M/m, and G/G/1 queues. (Not offered 1987-88.)

204A-B-C. Advanced Engineering Analysis

(4-4-4) Staff

Prerequisites: ECE 130A-B-C or equivalent, or consent of instructor. Lecture, 4 hours.

Selected topics in advanced mathematics for engineers, including such topics as engineering applications of some higher transcendental functions, asymptotic expansions, and calculus of variations. (F,W,S)

205A. Theory of Information

(4) Heidbreder

Prerequisites: ECE 140 or equivalent, or PSTAT 120A-B, or consent of instructor. Lecture, 4 hours. The concept of information and its quantitative measure, description of information sources in terms of Markov processes, discrete noiseless channels, channel capacity, noisy channels, continuous channels, signal design for noise immunity, error detection coding, and other applications of information theory in communications. (F)

207. Research Projects or Independent Studies

(1-6) Staff

Prerequisite: consent of instructor.

Graduate research projects or independent studies to be arranged between students and staff members. See M.S. degree requirements, plans I and II, regarding number of units which may be used for M.S. degree. (F,W,S,SS)

208A-B-C. Optical Systems Theory

(4-4-4) Staff

Prerequisites: ECE 144A-B or equivalent, ECE 146A-B or equivalent, or consent of instructor. Lecture, 4 hours.

Communication theory techniques, including Fourier transforms and autocorrelation functions, as applied to optical systems. Mathematical descriptions due originally to Rayleigh, Sommerfeld, Abbe, Michelson, Kirchhoff, Fresnel, Gabor, and others. Coherent image formation, holographic wavefront reconstruction, optical-data processing, and other topics. (F,W,S)

211A-B. Engineering Quantum Mechanics

(4-4) Kroemer

Prerequisite: ECE 212 or consent of instructor. Offered in alternate years. Lecture, 3 hours; discussion, 1 hour.

Introduction: Wave-particle duality. Schrodinger equation, operator formalism. Subsequently develops QM on level needed for advanced work in solid-state and quantum electronics. Symmetry, perturbations, transitions, radiation, many-body theory. Self-contained; treatment matches ECE student background. (W,S)

212. Introductory Quantum Mechanics

(4) Ordnung

Prerequisite: graduate standing. Lecture, 4 hours.

For the beginning solid-state graduate student. Topics include Schrodinger's wave equation, waves and wave-particle duality; uncertainty relations, wave packets, harmonic oscillator, reflection, tunneling, and Kronig-Penney modeling of band structures. (Not offered 1987-88.)

215. Bulk Semiconductor

(4) Merz

Prerequisite: ECE 212 or consent of instructor. Lecture, 4 hours.

Introduction into the physics of bulk semiconductors, for beginning engineering graduate students, on a level not requiring formal quantum mechanics. Crystal structures. Symmetry. Electron dynamics. Energy bands. Classification of solids. Impurities. Fermi statistics. Recombination. Optical properties. (S)

220A. Solid-State Device Processing

(4) Hu

Prerequisites: ECE 160B-C or consent of instructor. Lecture, 3 hours; discussion, 1 hour. Intensive theoretical and laboratory instruction in solid-state device and integrated circuit fabrication. Topics include (1) semiconductor material properties and characterization; (2) phase diagrams; (3) diffusion; (4) thermal oxidation; (5) vacuum processes; (6) thin-film deposition; (7) scanning electron microscopy. Both gallium arsenide and silicon technologies are presented. (F)

220B-C. Solid-State Device Design and Fabrication

(4-4) Hu

Prerequisite: ECE 220A or consent of instructor. Lecture, 4 hours.

Continued theoretical and laboratory instruction in the fundamentals, the design, the fabrication, and the characterization of junction and field-effect devices. Topics will include bipolar characterization, design, fabrication, and testing. The laboratory effort initiated in ECE 220A will be continued in these two quarters. (W,S)

221A-B. Device Physics of Semiconductor Junction Structures

(4-4) Kroemer

Prerequisites: ECE 160B or consent of instructor. This is a two-quarter in-progress course with a letter grade issued for both quarters upon completion of ECE 221B. Lecture, 4 hours.

Band diagrams of semiconductor homojunctions. Current transport across pn junctions and nn heterojunctions. Junction capacitance and C-V profiling. Bipolar transistors: injection efficiency; heterostructure designs; recombination losses; current limitations; equivalent circuits; speed limitations. Junction field effect transistors heterostructure FETs. (Not offered 1987-88.)

222. Principles of VLSI Circuit Design

(4) Ordnung

Prerequisite: graduate standing in ECE or consent of instructor. Lecture, 3 hours; laboratory, 3 hours.

Students will make use of computer-aided graphics to undertake mask layout. They will employ computer simulations such as SPICE to predict device performance. For students with fabrication comprehension, the course may be followed with fabrication projects. (W)

223. MOS Modeling, Design, and Fabrication

(4) Ordnung

Prerequisites: ECE 215 and 220, or consent of instructor. Lecture, 4 hours.

Topics will include current transport in junction and insulated gate effect devices and charge transport in multiple insulated gate devices such as CCDs. (F)

224A. VLSI Project Design

(4) Butner

Prerequisites: ECE 152A and ECE 154; or consent of instructor. Lecture, 4 hours.

Organization, planning, circuit design, mask layout, simulation, and analysis of Very Large-Scale Integrated circuits (VLSI circuits). Application of computer-aided design tools and techniques. Design of a substantial NMOS or CMOS VLSI project. (F)

224B. VLSI Project Testing

(2) Butner

Prerequisite: ECE 224A or equivalent. Lecture, 1 hour; laboratory, 3 hours.

Test equipment and testing techniques. Methods for diagnosing design problems. Students perform laboratory testing of their fabricated designs from ECE 224A. (S)

225. Gallium Arsenide Integrated Circuit Design

(4) Long

Prerequisites: ECE 160B; 160C; 136A; 152A or 136C; or consent of instructor. Lecture, 3 hours; laboratory, 3 hours.

Introduction to the design of high-speed digital or wide-band analog integrated circuits using gallium arsenide MESFETS. Device operation and models, logic circuit design, layout rules and CAD tools are covered. A substantial project is required. (Not offered 1987-88)

226A. Optoelectronic Devices

(4) Coldren

Prerequisites: ECE 161A-B, ECE 215, or consent of instructor. Lecture, 4 hours.

Fundamentals of semiconductors as used in optoelectronic devices, including optical absorption, luminescence, and stimulated emission. Emphasis on optical sources, such as LEDs and semiconductor lasers, but other devices will be treated. (F; offered in alternate years.)

226B. Guided Wave Optics

(4) Coldren

Prerequisites: ECE 144A-B or consent of instructor. Lecture, 4 hours.

Theory of dielectric waveguides including optical fibers and planar slab guides; techniques for mode launching; scattering theory; gratings. Waveguide fabrication and measurement. Materials and devices suitable for integrated optics — dielectric and semiconductor. (W; offered in alternate years.)

226C. Optical Fiber Communication

(4) Coldren

Prerequisites: ECE 226A-B or consent of instructor. Lecture, 4 hours.

Optical fiber systems including transmitter, transmission medium, and receiver components. Optical fiber structures and dispersion and loss

characteristics; sources, source-to-fiber coupling; photodetectors; optical receivers; transmission link analysis; local area networks. (S; offered in alternate years.)

230A-B. Linear Systems I, II

(4-4) Rhodes

Prerequisites: ECE 204A (for 230A); ECE 204A, ECE 140 (for 230B). Lecture, 4 hours.

Internal and external descriptions. Solution of state equations. Controllability and observability realizations. Pole assignment, observers; modern compensator design. Disturbance localization and decoupling. Least-squares control. Least-squares estimation; Kalman filters; smoothing. The separation theorem; LQG compensator design. Computational considerations. Selected additional topics. (W,S)

231. Numerical Systems Theory

(4) Laub

Prerequisite: ECE 130C or equivalent. Lecture, 4 hours.

Linear systems theory in finite (precision and range) arithmetic and implementations as mathematical software; linear equations, least squares, singular value decomposition, (generalized) eigenvalue/eigenvector problems; selected applications in control and systems theory. (W)

234. Analysis of Linear Models

(4) Laub

Prerequisite: graduate standing; ECE 130C or the equivalent is recommended but not required. Lecture, 4 hours.

Graduate-level matrix theory with emphasis on applications in engineering systems; geometric aspects of linear algebra; matrix factorizations; analysis and design techniques for discrete- and continuous-time linear lumped parameter models. (F)

235. Stochastic Processes in Engineering

(4) Iltis

Prerequisites: graduate standing; ECE 140 or the equivalent. Lecture, 4 hours.

Graduate-level course in stochastic processes with applications to estimation and communications theory. Models for linear and nonlinear electrical systems using the Doob-Meyer decomposition and white noise integrals. Analysis of electrical circuits driven by random inputs. Wiener and Kalman filtering for signal enhancement and estimation. (W)

237. Advanced Network Theory

(4) Mitra

Prerequisites: ECE 139A-B or consent of instructor. Lecture, 4 hours.

Foundations of network theory. Graph theory and network equations, network functions and representations, state equations, integral solutions, scattering matrices.

238A. Passive Filter Design

(4) Mitra

Prerequisite: ECE 149. Lecture, 3 hours; workshop, 1 hour.

An introduction to the design of passive filters with lumped and distributed elements. Filter specification and design process; reactance transformations; approximation theory; passive filters with lumped elements; crystal and ceramic filters; mechanical filters.

238B. Active Filter Design

(4) Mitra

Prerequisite: ECE 149. Lecture, 3 hours; workshop, 1 hour.

An introduction to the design of active filters with lumped, distributed elements, and switches. Active filters with lumped RC networks, active filters

with distributed RC networks, switched filters, n-path filters.

240A. Optimal Estimation and Filtering

(4) Heidbreder

Prerequisite: ECE 140 or equivalent, ECE 147B, Mathematics 108 or linear algebra, or consent of instructor. Lecture, 4 hours.

Optimal estimation concepts and theory (minimum variance, least-squares, and maximum likelihood estimation), optimal recursive algorithms for discrete- and continuous-time filtering of noisy signals and data. Wiener and Kalman filters, stability of recursive optimal filtering algorithms, modeling errors in recursive filters. (W)

240B. Detection Theory

(4) Heidbreder

Prerequisite: ECE 140 or equivalent, or consent of instructor. Lecture, 4 hours.

Hypothesis testing and its application to the formulation of decision rules for the "optimal" detection of signals in a noisy environment. Selection of optimality criteria, the derivation of optimum receivers, applications in radar and digital communications. Discussion of estimation theory as it relates to the estimation of parameters of detected signals. (S)

241. Space-Time Signal Processing

(4) Heidbreder

Prerequisite: ECE 240A. Lecture, 4 hours.

The processing of signals whose information content is associated with a spatial as well as a temporal distribution. Arrays, beamforming, space-time signal modeling. Applications of optimal filtering, estimation and detection theory in radar, sonar, seismology, radio astronomy, and other fields.

242. Digital Coding of Analog Signals

(4) Gersho

Prerequisites: ECE 146B, some background in estimation theory, or consent of instructor. Lecture, 4 hours.

Principles and techniques for encoding an analog signal into digital format. Basic quantization theory, uniform, nonuniform, robust, and optimal quantization. Differential and adaptive coding methods, transform coding, linear predictive coding; applications to speech and image coding. (F)

243. Digital Communication Theory

(4) Shynk

Prerequisites: ECE 140 and ECE 146B, or consent of instructor. Lecture, 4 hours.

Review of probability and random waveforms, optimum receiver principles, efficient signaling, bounds on error probability, channel capacity; emphasis on geometric approach to signal description. (W; offered alternate years.)

247A. Systems Optimization by Vector Space Methods

(4) Rhodes

Prerequisites: ECE 271A-B, Mathematics 160 or Mathematics 118, or equivalent, or consent of instructor. Lecture, 4 hours.

Formulation of system optimization problems in vector spaces (function spaces), range space for linear operators in vector spaces and controllability and observability, iterative computational methods, computational experiments on practical problems.

247B. Optimal Control Techniques

(4) Rhodes

Prerequisite: ECE 230B, ECE 271B or consent of instructor. Lecture, 4 hours.

Necessary and sufficient conditions for optimal control of dynamic systems, control- and state-variable constrained problems in optimal control computational methods for two-point boundary

value problems, computational experiments on practical problems.

247C. Systems Identification

(4) Riedle

Prerequisites: ECE 240A and concurrent enrollment in ECE 230B, or consent of instructor. Lecture, 4 hours.

Equivalent system models and canonical forms for state equations, impulse- and frequency-response identification methods, state model identification methods, application to selected problems. (S)

250. Advanced Topics in Computer Architecture

(4) Scherson

Prerequisites: ECE 154, CMPSC 170. Lecture, 4 hours.

Parallel and pipeline computer systems. High level language computer architectures. Multiprocessor networks. Distributed computer systems. Special purpose signal processors. (W)

252A. Sequential Machines and Automata Theory

(4) Howard

Prerequisite: ECE 152A or consent of instructor. ECE 252A-B-C taught every year. Lecture, 4 hours.

Structure of sequential machines, covers, partitions, decomposition, and synthesis of multiple machines. State identification and fault detection experiments. Memory characteristics of finite automata. Linear sequential machines. Finite-state recognizers, regular expressions, and regular sets corresponding to transition graphs. (F)

252B. Digital Computer Design: Digital Computer Arithmetic

(4) Howard

Prerequisites: ECE 152A-B or consent of instructor. Lecture, 4 hours.

Computer system design problems concerned with the organization and implementation of digital arithmetic processors. Basic and advanced algorithms for arithmetic operations and their hardware realization, error considerations in digital arithmetic, comparison of various approaches (e.g., serial, parallel, pipelined, multiple-processor) to arithmetic processor design. (W)

252C. Advanced Topics in Digital System Design

(4) Howard

Prerequisites: ECE 152A-B or consent of instructor. Lecture, 4 hours.

Digital system design utilizing microprocessing and associated LSI devices. Hardware and software design methodologies of mini/microcomputers for dedicated applications. Design considerations for distributed mini/microcomputer systems. Microprogrammed mini/microsystems. (S)

256. Digital Design Automation

(4) Staff

Prerequisites: ECE 152A-B or consent of instructor. Lecture, 4 hours.

Overview of design automation. Physical design: partitioning of functional elements, site selection and placement, wire wrap interconnection, printed circuit board layout, typical data structures. Simulation for design verification, test generation, and fault detection. Design automation batch and interactive computer systems. Software engineering in design automation.

257. Fault-Tolerant Computing

(4) Kelly

Prerequisites: ECE 152A-B or consent of instructor. Lecture, 3 hours, plus individual project.

Physical faults and testing, logical fault models. Generation of diagnostic tests for combinational

and sequential circuits. Simulation techniques. Reliable design theory, techniques, and analysis of digital systems. Case studies of fault-tolerant computer systems. (S)

258. Advanced Digital Signal Processing

(4) Mitra

Prerequisite: ECE 158 or consent of instructor. Lecture, 4 hours.

Digital filter design, discrete random signals, effects of finite word length arithmetic (error analysis), power spectrum estimation. (S)

259. Digital Speech Processing

(4) Gersho

Prerequisite: ECE 158 or consent of instructor. Lecture, 4 hours.

Speech sounds, acoustic phonetics, speech production and perception. Digital filter modeling of the vocal tract as a lossless tube. Short-time characteristics of speech in the time and frequency domains. Waveform and linear predictive coding of speech. Speech synthesis and recognition. (S)

260A-B. Principles of Quantum Electronics

(4-4-) Fontana

Prerequisite: ECE 144A or equivalent, or consent of instructor. Lecture, 4 hours.

Energy levels in atoms, ions, and molecules. Interaction between radiation and quantized systems. Stimulated emission devices. Optical resonators. Lasers. Electro-optic devices and nonlinear effects. (W,S; not offered 1987-88.)

269. Computer and Communication Networks

(4) Heidbreder

Prerequisites: ECE 169, ECE 154, or consent of instructor. Not available to students who have received credit for Computer Science 276. Lecture, 4 hours.

Taxonomy of network architecture; distributed processing; time sharing; delays in communication networks; performance evaluation; case studies of actual networks. (Course taught every other year.)

270A-B-C. Physiological Basis of Biomedical Engineering

(3-3-3) Horvath

Prerequisite: undergraduate course in control systems, or consent of instructor. Lecture, 3 hours.

Provides an intensive presentation of the physiology of a single-organ system and the application of this knowledge to engineering concepts. Systems covered will vary with student interest. Examples are cardiovascular, respiratory, renal, endocrine, metabolism, and transport systems. (F,W,S)

271A. Numerical Search Methods I

(4) Laub

Prerequisite: Mathematics 108 or equivalent linear algebra background. Lecture, 4 hours.

Types and sizes of numerical search problems; linear problems, linear programming, the simplex search method, duality. Unconstrained nonlinear problems, basic properties of solutions and algorithms, global convergence, convergence rate, and complexity considerations. Computational experiments on practical problems. (F)

271B. Numerical Search Methods II

(4) Laub

Prerequisite: ECE 271A or equivalent, or consent of instructor. Lecture, 4 hours.

Constrained nonlinear problems, basic properties of solutions and algorithms. Primal, penalty and barrier, cutting plane, and dual methods. Forward and backward dynamic programming methods. Convergence rate and complexity

considerations. Computational experiments on practical problems. (W)

272A-B. Software Engineering

(4-4) Staff

Prerequisite: Computer Science 170, Computer Science 162 or consent of instructor. Lecture, 4 hours.

Principles of software engineering discipline emphasizing structured programming concepts and their formalizations; software design and management; program testing and correctness proofs; data abstraction; diagnostic tools; dual programming; software metrics.

276A-B-C. Special Topics in Solid-State Devices

(4-4-4) Ordung

Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Lecture, 3 hours.

Solid-state device group-study seminar on topics of current interest which may include surface and bulk phenomena, devices of interest to integrated circuits, and optoelectronics and their fabrication.

277B. Pattern Recognition

(4) Hackwood

Prerequisites: ECE 130A-B-C, ECE 15A, or consent of instructor. Lecture, 4 hours.

Algorithms used in the automatic recognition of patterns by machine. Machine learning and classification problems, scene analysis, speech recognition, and character recognition techniques will be covered. (W; offered every other year.)

278. Computer Image Processing

(4) Mitra

Prerequisite: ECE 178 or its equivalent, or consent of instructor. Lecture, 3 hours; laboratory, 3 hours.

Processing of pictorial information by computer including digital, optical, and other analog methods. Follow-on course to ECE 178 with concepts presented at a somewhat more advanced level. Laboratory experience is offered. (S)

279. Computer System Performance Evaluation

(4) Wood

Prerequisite: ECE 140, ECE 154, Computer Science 170, or consent of instructor. Lecture, 4 hours.

Overview of the evaluation of computer system performance. Measurement, simulation, and analytic techniques for performance analysis. System work load characterization. Examples of performance evaluation for system selection, tuning, and design. Evaluation of program performance.

280. Computer Graphics

(4) Scherson

Prerequisite: Computer Science 180. Lecture, 4 hours.

Selected topics in computer graphics including: advanced display architectures; graphic representations of three dimensional objects; techniques for achieving visual realism, shadows, antialiasing, and texture; advanced color and lighting models; ray tracing algorithms; stereoscopic projection; contour generation; mapping; metafiles and graphic standards.

281A. Robot Motion

(4) Beni

Prerequisite: ECE 181A-B-C or equivalent, or consent of instructor. Lecture, 4 hours.

Advanced course on the mathematics, dynamics, and control of robot systems. Homogeneous transformations, kinematic and dynamic equations and their solutions, motion trajectories, static forces, compliance, programming, position, and force control. (F)

281B. Robot Perception

(4) Hackwood

Prerequisite: ECE 281A or equivalent, or consent of instructor. Lecture, 3 hours; laboratory, 3 hours.

Advanced course on robot sensing and perception. Emphasis on robot vision including image formation, processing, and understanding. Stereo and color vision. Hand-eye coordination and navigation. Other sensors include tactile, acoustic, thermal, and chemical imaging and perception. (W)

293. Internship in Industry

(1-6) Staff

Prerequisite: prior departmental approval needed. May be repeated to a maximum of 6 units.

Special projects for selected students. Offered in conjunction with engineering practice in selected industrial and research firms, under direct faculty supervision. (F,W,S,SS)

501. Techniques of Engineering Teaching

(2) Staff

Prerequisites: consent of graduate adviser. This course is required for new teaching assistants, and may be taken only once. No unit credit allowed toward advanced degree. S/U grading only. An initial 1-2 day workshop on teaching techniques, followed by practical experience in teaching, video-taping, and meetings with instructional consultation staff to improve techniques. (F)

502. Teaching of Electrical and Computer Engineering

(1-4) Staff

Prerequisite: ECE 501 or consent of instructor. May be taken concurrently with ECE 501. No unit credit allowed toward advanced degree.

Procedures and techniques for teaching electrical engineering or computer engineering gained through actual teaching of lecture courses, leading discussion sections, and/or teaching engineering laboratories. Meetings will be held as needed to discuss problems, methods, and procedures. (F,W,S)

594AA-ZZ. Special Topics in Electrical and Computer Engineering

(1-5) Staff

Prerequisites: consent of instructor and graduate status. May be repeated for credit if there is no duplication of course content. Instruction in these courses may be carried out by lecture, or by laboratory, or by a combination of these. These courses provide a study of topics of current interest in various areas of electrical and computer engineering. Special topics are coded as follows: A. Circuits. B. Systems Theory. C. Communication Systems. D. Control Systems. E. Signal Processing. F. Solid State. G. Fields and Waves. H. Quantum Electronics. I. Microwave Electronics. J. Switching Theory. K. Digital Systems Design. L. Computer Architecture. M. Computer Graphics. N. Pattern Recognition. O. Microprocessors and Microprocessor-based Systems. P. Simulation. Q. Imaging Systems and Image Processing. R. General. S. Speech. T. Robot Control. (F,W,S)

595AA-ZZ. Group Studies in Electrical and Computer Engineering

(1) Staff

Prerequisite: consent of instructor. No unit credit allowed toward degree. May be repeated for enrollment credit if there is no duplication of course content. Instruction in research group meetings carried out by lecture, by laboratory, or by a combination of the two. Courses provide a critical review

of research in various areas of electrical and computer engineering. (F,W,S)

596. Directed Research

(2-12) Staff

Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a faculty member (F,W,S,SS)

597. Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff

No unit credit allowed toward advanced degree. Enrollment limited to 24 units per exam.

Individual studies for M.S. comprehensive examinations and Ph.D. examinations. Maximum of 12 units per quarter. S/U grading. Instructor is normally student's major professor or chair of doctoral committee. (F,W,S,SS)

598. Master's Thesis Research and Preparation

(1-12) Staff

Prerequisite: consent of graduate adviser. For research underlying the thesis and writing of the thesis. (F,W,S,SS)

599. Ph.D. Dissertation Research and Preparation

(1-12) Staff

Prerequisite: consent of chair of student's doctoral committee.

Research and preparation of dissertation. (F,W,S,SS)

Engineering Sciences

Engineering Sciences, Office of the Associate Dean for Academic Affairs, College of Engineering; Engineering I, Room 1028; Telephone (805) 961-3207 or 961-2809.

ENGINEERING SCIENCES COURSES

LOWER DIVISION

Note: Students will not receive credit toward graduation even as a free elective if they repeat what is essentially the same subject in different courses. An example of such a redundancy is Engineering 3 and Computer Science 5FO.

3. Computer Solutions of Engineering and Science Problems

(3) Staff

Prerequisite: Mathematics 3A, can be taken concurrently. Limited to lower-division majors in engineering, or consent of instructor; not open to students who have completed Computer Science 5FO.

Application of computers to engineering and scientific problems. Provides working knowledge of FORTRAN language programming, using a structured FORTRAN compiler. Students will use the computer. (F)

UPPER DIVISION

100. Engineering Economic Analysis

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,S)

101. Ethics in Engineering

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

The nature of moral value, normative judgment, and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (S)

103. Technical Writing

(2-3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

Writing and editing a variety of technical forms such as reports, articles, abstracts, and proposals. (Third unit awarded for additional writing.) (F,W,S)

Materials

Department of Materials; Telephone (805) 961-4362; Department Chair: Anthony G. Evans

Faculty

- Larry A. Coldren, Ph.D., Stanford University, Professor (*semiconductor integrated optics, optoelectronics, optical fiber communication, waveguide modulators*)
- Anthony G. Evans, Ph.D., Imperial College (London), Professor, Co-Director of High Performance Composites Center (*mechanical behavior, ceramics, composites, powder processing*)
- Arthur C. Gossard, Ph.D., UC Berkeley, Professor (*epitaxial growth, artificially synthesized semiconductor microstructures, semiconductor devices*)
- Alan J. Heeger, Ph.D., U.C. Berkeley, Professor (*condensed matter physics, conducting polymers*)
- Jacob N. Israelachvili, Ph.D., Cambridge University, Professor (*adhesion, surface forces, colloids*)
- Herbert Kroemer, Dr. Rer. Nat., University of Göttingen, Professor (*device physics, molecular beam epitaxy, heterojunctions, compound semiconductors*)
- Frederick F. Lange, Ph.D., Pennsylvania State University, Professor (*processing, ceramics, microstructure, mechanical properties*)
- Carlos G. Levi, Ph.D., University of Illinois, Assistant Professor (*materials processing, solidification, fine structures, process modelling*)
- Glenn E. Lucas, Ph.D., Massachusetts Institute of Technology, Associate Professor (*radiation damage, mechanical and structural analysis*)
- Robert M. McMeeking, Ph.D., Brown University, Professor (*applied mechanics, plasticity, computational methods, fracture*)
- Robert Mehrabian, D.Sc., Massachusetts Institute of Technology, Professor, Co-



I came to UCSB's College of Engineering about a year and a half ago with a small group of other materials scientists who were asked to set up an innovative, highly interdisciplinary new graduate department in materials. Over the last year, we have worked hard to develop a philosophy and relevant curriculum. The 1987-88 academic year will be our first full year of operation, and we are looking forward to rapid development into the leading materials department in the U.S.

My own field of macromolecular materials provides a good example of the kind of endeavor upon which we are embarking. With researchers from many different fields, we are developing a broad but coherent effort which spans innovative electrical conducting polymers, polymer processing, self-assembling systems, and general rheology of complex fluids. We are already interacting strongly with our colleagues in ceramics and micromechanics about new ideas in ceramic processing and polymer-containing composites.

Our program is based on the desire to provide students with a realistic, strongly interactive, interdisciplinary environment, which will provide a new generation of broadly trained materials scientists. The level of enthusiasm being generated both at UCSB and throughout the worldwide materials community is highly gratifying. We are having a lot of fun and getting a lot of first-rate science accomplished — these are the bottom lines!

OKS

Philip A. Pincus
Professor
Department of Materials

Dr. Pincus came to UCSB after 20 years on the physics faculty at UCLA. He currently serves on the Department of Energy's Council on Materials Science. He has received fellowships from the National Science Foundation and the Japan Society for the Promotion of Science and was a 1975 Guggenheim Fellow and the 1981 Joliot Curie Professor at the École Supérieure de Physique et de Chimie Industrielles in Paris. He has published widely in both national and international journals in his field.

Director of High Performance Composites Center (*metallurgical processing, fine structures, composites, sensors for materials processing*)

- James L. Merz, Ph.D., Harvard University, Professor, Director of Compound Semiconductor Research Center (*optical properties of semiconductors, defects in solids, ion implantation, laser annealing*)
- Frederick Milstein, Ph.D., UC Los Angeles, Professor (*crystal mechanics, bonding, defects, mechanical properties*)
- G. Robert Odette, Ph.D., Massachusetts Institute of Technology, Professor (*radiation effects, materials technology for fusion and fusion reaction, environment*)
- Pierre M. Petroff, Ph.D., UC Berkeley, Professor (*semiconductor interfaces, defects, quantum structures*)
- Philip A. Pincus, Ph.D., UC Berkeley, Professor (*polymers, colloids, surfactants*)
- Manfred Rühle, Dr. rer. nat., University of Stuttgart, Visiting Professor (*microstructural characterization, electron microscopy, ceramics, composites, interfaces*)
- Paul Smith, Ph.D., Rijks Universiteit Groningen, Professor (*polymers, polymer processing, phase behavior*)

The Materials Program is a new graduate activity that emphasizes multidisciplinary aspects of materials. The program provides graduate education designed to address the present and future needs of industries and research establishments engaged in advanced materials problems and applications. The development and application of advanced materials is invariably multidisciplinary. Consequently, the program consists of several discrete faculty groups, each having major responsibility for a class of advanced materials. Areas of commonality and overlap amongst groups are recognized and encouraged. The areas of emphasis are based on requirements in the advanced materials arena. They include structural materials, electronic materials and macromolecular materials, in conjunction with closely associated activities in materials processing, materials characterization and materials performance.

Admission

Undergraduate preparation for the Materials M.S./Ph.D. normally includes a degree in engineering or the physical sciences. However, the breadth of the materials field requires that flexibility be built into the undergraduate educational requirements. Upper-division courses in several of the following topics would usually be expected: (1) mathematics — about 24 units in advanced calculus, ordinary differential equations, special functions and complex variable theory; (2) engineering thermodynamics — about 9 units; (3) solid state physics — about 9 units; (4) physical chemistry — about 12 units; (5) materials science — about 12 units in mechanical properties, electronic properties, structure, processing; (6) electronics — about 12 units; (7) mechanics — about 9 units in advanced strength of materials, elasticity, structures. An incoming student would not be expected to meet all requirements. Generally, students must satisfy the requirements in mathematics and at least two other areas. The areas to be covered will depend on the student's chosen graduate field of study within materials. Deficiencies will be addressed during the first year of graduate study. Some of the preparatory courses may be part of the program of study, with up to six units of credit allowed toward either the M.S. or Ph.D. degree. The preparatory course content will be approved and credit allowance assigned by the Academic Affairs Committee.

Students possessing a B.A. degree are admitted to M.S./Ph.D. status and those with an M.S. degree (and having a 3.5 minimum grade-point average) are admitted to Ph.D. status. Admission is available for all quarters, with no specific departmental deadlines beyond those of the Graduate Division. Satisfactory performance in the verbal, quantitative, and analytical sections of the Graduate Record Examination is required.

The Master's Program in Materials

A student having a B.S. degree would enter the M.S. program in preparation for candidacy to the Ph.D. The M.S. degree program introduces students to the knowledge needed to proceed to candidacy as well as to the nature of research and the discipline of independent work. The department does not admit students who are interested in only an M.S. degree. Students in the following categories may earn an M.S. degree if they write an acceptable master's thesis: (1) students who do not pass the Ph.D. preliminary examination and (2) students who pass the preliminary examination and wish to receive an M.S. degree en route to the Ph.D. There is no oral defense of the M.S. thesis.

The Ph.D. Program in Materials

Students entering the Department of Materials can select a curriculum from several major themes, including: macromolecular materials, structural materials, electronic materials, and mechanics of materials. Each theme consists of a specified course sequence with emphasis on lectures but also includes laboratory experience and seminars. Doctoral students are expected to complete a dissertation based on original research. The dissertation is supervised by a research adviser and a committee consisting of four materials faculty (including the adviser). Students entering the program with a B.S. degree are expected to take 42 units of 200-level course work (excluding seminars and the dissertation) while students entering at the M.S. level will take 18 units of 200-level courses. The course sequence has a major emphasis in one theme, in conjunction with two minors. The major includes at least two courses selected from the core. A minor is a coherent course sequence (typically three courses) in a theme clearly outside the student's designated major. The minor may consist of courses offered within the Department of Materials or courses offered entirely within another department or program.

With approval of the Academic Affairs Committee, students may substitute a maximum of six upper-division units for credit toward the 200-level course requirements.

There is no foreign language requirement.

A student normally will take a Ph.D. preliminary examination by the end of the fourth quarter of residence to determine eligibility to continue in the program. At the end of the second year, the student will present a dissertation proposal and defend it to a faculty committee. If the proposal is accepted, the student advances to candidacy and devotes full time to dissertation research and writing. The defense of the dissertation normally takes the form of a public seminar.

MATERIALS COURSES

GRADUATE COURSES

201. Thermodynamics of Materials

(3) Evans

Prerequisite: consent of instructor. Lecture, 3 hours.

Advanced thermodynamics with emphasis on phase transformations, properties of solutions, and multicomponent systems.

202. Kinetic Processes in Materials

(3) Odette

Prerequisite: consent of instructor. Lecture, 3 hours.

Kinetics of transformations of materials with emphasis on first order phase transformation.

203A. Microstructural Characterization

(4) Rühle

Prerequisite: consent of instructor. Lecture, 3 hours.

The optical microscope and its different imaging techniques. Limit of resolution. Electromagnetic lenses. Electro-optical instruments.

203B. Advanced TEM

(4) Rühle

Prerequisite: consent of instructor. Lecture, 3 hours.

Solution of Schrodinger equation for fast electrons in periodic crystals. Dynamical theory of electron and x-ray diffraction. Dispersion surface. Dynamical contrast of lattice defects. Convergent beam electron diffraction. High resolution electron microscopy.

203C. Characterization of Materials

(3) Rühle

Prerequisite: consent of instructor.

A survey of characterization methods. Topics will include magnetic resonance, light scattering, ellipsometry, and polagraphy.

204. Materials Structures and Bonding

(3) Milstein

Prerequisite: consent of instructor. Same course as ME 260A. Lecture, 3 hours.

Crystal structures (Miller indices, Bravais lattices, symmetry operations, bases, crystal diffraction, reciprocal lattices, Brillouin zones); elements of statistical thermodynamics and quantum mechanics; ionic, covalent, and metallic bonding.

205. Mechanical Behavior of Materials

(3) Staff

Prerequisite: consent of instructor. Same course as ME 263. Lecture, 3 hours.

Mechanics of brittle and ductile fracture. Fracture resistance of materials. Characteristic flaws and crack initiation. Fracture statistics. Stress corrosion cracking and hydrogen embrittlement. Fatigue crack propagation. Creep and creep rupture processes.

206. Electronic Properties of Materials

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Introduction into the physics of electronic conduction with emphasis on semiconductors. Crystal structures and symmetry. Energy bands. Electron dynamics. Energy bands. Recombination processes. Optical properties.

207. Mechanics of Materials

(3) McMeeking

Prerequisite: consent of instructor. Same course as ME 219. Lecture, 3 hours.

Matrices and tensors, stress deformation and flow, compatibility conditions, constitutive equations, field equations and boundary conditions in fluids and solids, applications in solid and fluid mechanics.

208. Crystallography and Diffraction

(4) Rühle

Prerequisite: consent of instructor. Lecture, 3 hours.

Symmetry and crystallography. Point groups and space groups. Structures of representative materials. Fourier transformations and reciprocal space. Diffraction of x-rays, electrons, and neutrons by single and polycrystalline materials.

211. Introduction to Quantum Mechanics of Solids

(3) Kroemer

Prerequisite: consent of instructor. Lecture, 3 hours.

Wave-particle duality. Schrodinger equation, operator formalism. QM on level needed for advanced work in solid-state and quantum electronics. Symmetry, perturbations, transitions, radiation, many-body theory.

213. Crystal Growth and Thin Film Epitaxy

(3) Petroff

Prerequisite: consent of instructor. Lecture, 3 hours.

Nucleation and epitaxy: homogeneous and heterogeneous epitaxy. Growth mechanism, defect creation. Kinetics and thermodynamics of crystal growth for: liquid phase epitaxy, vapor phase epitaxy and molecular beam epitaxy of metals and semiconductors.

222A-B. Colloids and Interfaces

(3-3) Israelachvili

Prerequisite: consent of instructor. Lecture, 3 hours.

A: Introduction to the various interactions in solutions and colloidal systems: Van der Waals, electrostatic, hydrophobic, solvation, H-bonding. Introduction to colloidal systems: particles, micelles, polymers, etc. Surfaces: wetting, contact angles, adhesion, adsorption isotherms, etc.

B: Surfactant self-assembly: micelles, micro-emulsions, lamellar phases, etc. Surfactants on surfaces: Langmuir-Blodgett films, detergency, interparticle interactions, coagulation, flocculation, etc. Steric interactions: polymer coated surfaces, polymers in solution, etc. Phase diagrams of polymer/surfactant systems.

223. Polymer Solid State

(3) Smith

Prerequisite: consent of instructor. Lecture, 3 hours.

Amorphous polymers. The glassy state and the glass transition. Rubbers and rubber elasticity. Crystalline polymers. Nucleation, crystallization, and melting. Morphology and the relations between structure and properties.

230. Elasticity

(3) McMeeking

Prerequisite: consent of instructor. Same course as ME 230. Lecture, 3 hours.

Review of the field equations of elasticity. Energy principles and uniqueness theorems. Elementary problems in one and two dimensions. Stress functions, complex variable methods and potentials for three-dimensional analysis. Fundamental solutions in two and three dimensions. Approximate methods.

232. Plasticity

(3) McMeeking

Prerequisite: consent of instructor. Same course as ME 232. Lecture, 3 hours.

Review of inelastic deformation of solids, stress-strain curves, creep and relaxation behavior, etc. Time independent plasticity and its relationship to creep, viscoelasticity, viscoplasticity, and non-Newtonian fluid flow.

233. Polymer Processing

(3) Smith

Prerequisite: consent of instructor. Lecture, 3 hours.

The technology of processing polymers into useful objects. Fiber spinning, film blowing, polymer foams, injection molding, extrusion and mixing, film casting, thermo forming. Drawing, uniaxial and biaxial. High-performance polymer materials.

234. Fracture Mechanics

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Analytic solutions of a stationary crack under static loading. Elastic and elastoplastic analysis. The J integral. Energy balance and crack growth. Criteria for crack initiation and growth. Dynamic crack propagation. Fatigue. The micromechanics of failure.

235A. Defects in Materials

(3) Petroff

Prerequisite: consent of instructor. Lecture, 3 hours.

Defects in materials; crystal structure and atomic bonding in crystals. Point defects and diffusion. Dislocation theory in cubic and hexagonal metals. Dislocations. Point defect interactions. Planar defects, grain boundaries in metals.

235B. Defects in Semiconductors

(3) Petroff

Prerequisite: ECE 161A. Lecture, 3 hours.

Structural and electronic properties of elementary defects in semiconductors. Point defects and impurity complexes. Deep levels. Dislocations and grain boundary electronic properties. Measurement techniques for radiative and nonradiative defect centers.

236. Advanced Fracture Mechanics

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Theoretical and experimental basis for theories of crack propagation in nonlinear or inhomogeneous materials. Topics selected from: elastoplastic fracture mechanics in large scale yielding; stable elastoplastic crack growth; creep cracking; cracks near bimaterial interfaces; stress corrosion cracking; and others.

240. Finite Element Structural Analysis

(3) Staff

Prerequisite: consent of instructor. Same course as ME 271.

Definitions and basic element operations. Displacement approach in linear elasticity. Element formulation: direct methods and variational methods. Global analysis procedures: assemblage and solution. Plane stress and plane strain. Solids of revolution and general solids. Isoparametric representation and numerical integration. Computer implementation.

250. Solidification Processing

(3) Levi

Prerequisite: consent of instructor. Lecture, 3 hours.

Transport phenomena, thermodynamics and kinetics of solidification. Principles of solute redistribution: microsegregation and macrosegregation. Evolution of solidification microstructure:

plane front, cellular, dendritic, and cooperative growth. Metastable structures and interfacial nonequilibrium.

251A. Ceramic Processing

(3) Lange

Prerequisite: consent of instructor. Lecture, 3 hours.

Processing of ceramics: glass-ceramics, gelation, and powder methods. Powder methods will be emphasized from powder manufacture through consolidation of shape, with introduction to densification. Colloidal routes to powder preparation and consolidation.

251B. Densification and Microstructural Control

(3) Lange

Prerequisite: consent of instructor. Lecture, 3 hours.

Mass transport and kinetic sintering theories. Thermodynamics of pore phase disappearance. Grain growth during densification. Effects of a liquid phase (liquid phase sintering). Effects of inert phases on densification. Effects of applied pressure. Control of grain growth after densification.

261. Composite Materials

(3) Evans

Prerequisite: consent of instructor. Lecture, 3 hours.

Stress and strain relations in composites. Residual stresses. The fracture resistance of organic and inorganic matrix composites. Statistical aspects of fiber failure. Composite laminates and delamination cracks. Cumulative damage concepts. Interface properties. Design criteria.

262. Structural Ceramics

(3) Lange

Prerequisite: consent of instructor. Lecture, 3 hours.

Ceramic processing methods. Flaws in ceramics. Fracture resistance and microstructure. Probabilistic design concepts. Non-destructive evaluation approaches. Reinforced ceramics. High temperature properties. Impact damage.

263. Alloy Design

(3) Lucas

Prerequisite: consent of instructor. Lecture, 3 hours.

Matching material performance with the needs of particular engineering applications through control of alloy chemistry, processing, and component fabrication history. Processing — microstructure — property relations. Case histories: energy, aerospace, transportation.

271. Corrosion

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Electrochemical corrosion: galvanic series, polarization, Pourbaix diagrams, anodic and cathodic protection. Chemical corrosion: oxidation, sulfidation, liquid metal dissolution; stress corrosion cracking, intergranular attack.

272. Radiation Effects in Materials

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Review of field of radiation damage to structural materials used in fission and fusion power systems. Fundamental theoretical basis of radiation damage models, experimental data base, and methods of predicting damage to engineering structures are required.

281A. Structure and Properties of Polymers: Statics

(3) Pincus

Prerequisite: consent of instructor. Lecture, 3 hours.

Polymerization; dilute and semidilute linear polymer solutions; bulk polymers and blends; copolymers; characterization methods.

281B. Structure and Properties of Polymers: Dynamics and Phase Equilibrium

(3) Pincus

Prerequisite: consent of instructor. Lecture, 3 hours.

Phase equilibrium and transitions; functionalized polymers: liquid crystals, polymer amphiphiles, associating polymers, polypeptides, etc.; solution dynamics; introduction to polymer rheology.

285. Structure of Interfaces

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Homophase and heterophase interfaces. Dichromatic pattern of interfaces (group theoretical description). Geometrical models of interfaces. Relaxations at interfaces and atomic structure, energies of interfaces. Bonding across interfaces. Thermodynamics and wetting of interfaces. Segregation.

286. Bonding and Crystal Elasticity

(3) Milstein

Prerequisite: consent of instructor. Lecture, 3 hours.

Bonding and elasticity in metals, ceramics, and salts. Atomistic basis for structure, elastic behavior, and stability of crystals.

287. Special Topics in Macromolecular Materials

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

This course will be offered on an irregular basis and will concern in-depth discussions of advanced topics in macromolecular materials.

290. Research Group Studies

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

In this course students or instructors present recently published papers and/or results relevant to their own research.

299. Seminar in Materials Science and Engineering

(3) Pincus, Smith

Seminar, 2 hours.

A seminar course recommended at least once per year for all materials students. Internal and external speakers will present mini-courses on advanced topics which should be of general interest to materials scientists. Students will prepare status reports.

RELATED COURSES IN OTHER DEPARTMENTS**ELECTRICAL AND COMPUTER ENGINEERING****215A. The Bulk Semiconductor**

(3) Merz, Kroemer

MECHANICAL ENGINEERING**219. Continuum Mechanics**

(3) McMeeking

230. Elasticity

(3) McMeeking

260A. Engineering Materials

(3) Milstein

260C. Engineering Materials

(3) Evans

262. Metallurgical Thermodynamics

(3) Milstein

268. Materials Processing

(3) Levi

275. Fracture Mechanics

(3) McMeeking

NUCLEAR ENGINEERING**211. Electron Microscopy: Theory and Application**

(4) Lucas, Staff

217. Radiation Effects in Structural Materials

(4) Lucas, Odette

250. Physical Metallurgy

(4) Odette, Lucas

251. Kinetics of Phase Transformations in Materials

(3) Odette

Mechanical and Environmental Engineering

Department of Mechanical and Environmental Engineering, Engineering II, Room 2355; Telephone (805) 961-2239. Department Chair: Jean-Louis Armand

Faculty

Jean-Louis Armand, Ph.D., Stanford University, Professor (*dynamics of marine structures, structural optimization and reliability*)
 Eduardo Bayo, Ph.D., UC Berkeley, Assistant Professor (*computational mechanics, structural analysis, structural dynamics*)
 John C. Bruch, Jr., Ph.D., Stanford University, Professor (*applied mathematics, numerical solutions and analysis*)
 Howard D. Eberhart, M.S., Oregon State University, Professor Emeritus
 Anthony G. Evans, Ph.D., Imperial College, London, Professor, Co-Director of High Performance Composites Center (*fundamental research on mechanical properties and fabrication of brittle materials, including fracture, deformation, creep, fatigue, erosion, wear, NDE, sintering, and impact damage*)
 Roy S. Hickman, Ph.D., UC Berkeley, Professor (*fluid mechanics, physical gas dynamics, computer-aided design*)
 Theodore Kokkinis, Ph.D., University of Michigan, Assistant Professor (*dynamics and control of mechanical systems, structural mechanics, robotics*)
 Carlos Levi, Ph.D., University of Illinois at Urbana-Champaign, Assistant Professor (*materials processing, advanced solidification technologies, fine structures, process modelling, and microstructural analysis*)

Wilbert J. Lick, Ph.D., Rensselaer Polytechnic Institute, Professor (*oceanography and limnology, applied mathematics*)

Xanthippi Markenscoff, Ph.D., Princeton University, Associate Professor (*solid mechanics, elastodynamics, dynamic plasticity*)

Ekkehard P. Marschall, Dr. Ing., Technische Hochschule Hannover, Professor (*thermodynamics, heat and mass transfer, desalination, energy conversion, experimental techniques*)

Eric F. Matthys, Ph.D., California Institute of Technology, Assistant Professor (*heat transfer, fluid mechanics, rheology*)

Stephen R. McLean, Ph.D., University of Washington, Associate Professor (*fluid mechanics, physical oceanography, sediment transport*)

Robert M. McMeeking, Ph.D., Brown University, Professor (*mechanics of materials, fracture mechanics, plasticity, computational mechanics*)

Robert Mehrabian, D.Sc., Massachusetts Institute of Technology, Professor, Co-Director of High Performance Composites Center (*metallurgical processing, fine structures, metal-matrix composites, non-destructive evaluation, advanced sensors and intelligent control systems for materials processing*)

Frederick Milstein, Ph.D., UC Los Angeles, Professor (*materials science and metallurgy*)

Thomas P. Mitchell, Ph.D., California Institute of Technology, Professor (*theoretical and applied mechanics*)

Bradley E. Paden, Ph.D., UC Berkeley, Assistant Professor (*control theory, kinematics, robotics*)

William T. Thomson, Ph.D., UC Berkeley, Professor Emeritus

Marshall Tulin, M.S., Massachusetts Institute of Technology, Professor, holder of Presidential Chair, Ocean Engineering Laboratory Director (*hydrodynamics, aerodynamics, turbulence, cavitation phenomena, drag reduction in turbulent flows*)

Garret N. Vanderplaats, Ph.D., Case Western Reserve University, Professor (*optimization, structural optimization, solid mechanics, design*)

James P. Vanyo, Ph.D., UC Los Angeles, Professor (*rotating nonrigid bodies, fluid dynamics*)

Walter W. Yuen, Ph.D., UC Berkeley, Associate Professor (*thermal science, radiation heat transfer, heat transfer with phase change, combustion*)

The undergraduate program in mechanical engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The curriculum establishes a foundation in the physical and engineering sciences, mathematics, and the humanities. The undergraduate program includes courses in engineering mechanics, strength of materials, theoretical analysis, thermodynamics, heat transfer, fluid mechanics, control systems, materials science, and engineering and design. Undergraduates are also required to take laboratory courses in fluid mechanics, thermal sciences, control systems, engineering mechanics, engineering materials and design concepts, and properties of materials. During the senior year, students design and build sophisticated engineering projects, many of which have won important awards in national design competitions.

Qualified students who wish to pursue advanced engineering education may enroll in the M.S. or

Ph.D. programs. The department offers programs leading to the degrees of Master of Science and Doctor of Philosophy, with a specialization in any of the following major areas: dynamic systems, control and robotics; fluid mechanics; materials science and engineering; ocean engineering; solid mechanics and structures; and thermal sciences. The curricula for all of the major areas emphasize education in broad principles and fundamentals. At the same time, programs of study and research are flexible and tailored to accommodate the individual needs and interests of the students. Interdisciplinary approaches are stressed, and students are encouraged to cross over traditional boundaries into other departments.

The M.S. program is intended to extend and broaden the undergraduate background and/or equip practicing engineers with state-of-the-art knowledge in their field. The degree may be terminal or obtained on the way to the Ph.D. The Ph.D. program is designed to prepare students for a career in research and/or teaching in their area of specialization.

Mechanical engineering graduates at all levels are highly sought after for employment with oil companies, materials manufacturers, and automotive, aircraft, marine, defense, and electronics industries. A major in mechanical and environmental engineering may also serve as an appropriate part of the program of studies required for a California community college teaching credential. Students who wish to secure this credential should consult the designated adviser in the Graduate School of Education.

Undergraduate counseling is provided under the direction of the assistant to the dean for undergraduate studies. Individual faculty members are also available for help in academic program planning. A graduate adviser and the department chair, in conjunction with a graduate studies committee, help to direct the program of studies for M.S. and Ph.D. candidates. Undergraduate students enrolled in other majors at UCSB who plan to change to a major in the Department of Mechanical and Environmental Engineering may obtain counseling from the assistant to the dean for undergraduate studies.

Laboratory Facilities of the Department

Well-equipped teaching and research laboratories can be used to conduct experimental research as well as computations. In addition to already existing facilities, three large new facilities have been built for materials engineering, ocean engineering, and robotics, the latter as part of the new NSF Center in Robotics established on campus, providing unique opportunities for research in these areas.

1. Dynamical Systems Laboratory. This laboratory supports the theoretical studies undertaken in the engineering mechanics courses ME 163A-B. It provides practical experience in experimental techniques and electronic instrumentation associated with stress wave propagation, dynamic balancing, torsional oscillations, structural dynamic response, inertial navigation, and modal analysis of structures.

2. Control Systems Design Laboratory. The feedback controls laboratory is organized to give students experience in analyzing, designing, and testing feedback control systems. Major experiments are performed for a temperature control system, a vehicle speed control system, a force-controlled gripping device, a digital motion control system for DC drives, a hybrid force-position control system for a gantry robot, and a small robotic arm. Microcomputers are used for direct digital control of experiments.

3. Rotating Fluids Laboratory. The laboratory is equipped to investigate flow velocities and internal energy dissipation rates in rotating liquids. Results are used to predict communication satellite and rocket vehicle performance, to test analytical geophysical models of the earth's interior, and to improve understanding of phenomena in rotating and turbulent fluids.

4. Thermodynamics Laboratory. This laboratory contains equipment and experimental setups including a gas turbine, a refrigeration system, a heat exchanger test stand, a steam boiler, a small wind tunnel for study of cross-flow heat transfer from a heated cylinder, an experimental apparatus for the study of gas behavior, an experimental setup for study of heat transfer from extended surfaces, and other items.

5. Fluids Laboratory. This laboratory contains a pipe pressure drop experiment to demonstrate practical aspects of friction factors in pipe flow; a wave tank and wave generator to study wave structure interactions; a variable pitch/speed impeller experiment to study characteristics of centrifugal pumps and turbines; and an experiment to observe fluid erosion and sedimentation. Apparatus is available for measuring important physical properties of fluids.

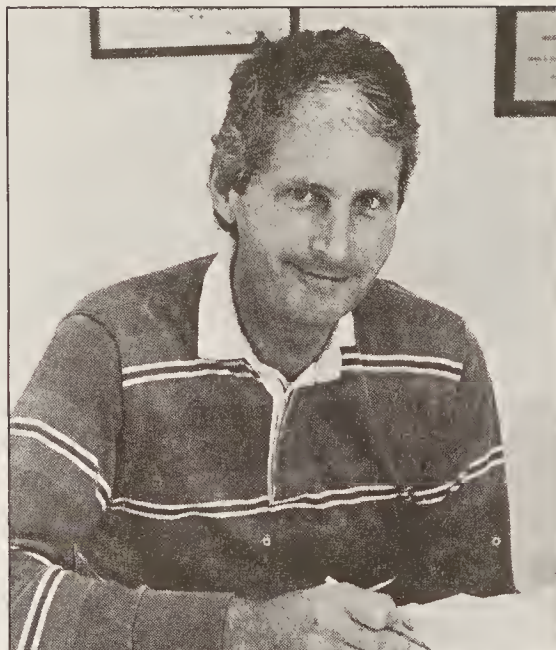
6. Thermal Science Laboratory. The laboratory contains equipment to study multi-phase flow, heat and mass transfer characteristics in boiling, condensation, direct-contact heat transfer, radiative heat transfer in combustion media, melting, and freezing. Additional equipment is available for determination of various thermodynamic and transport properties.

7. Design Optimization Laboratory. The activities of this laboratory focus on automation of the design process. Research spans the spectrum from fundamental development of optimization algorithms to their routine application to engineering design. Projects include the development of methods for efficient, fully automated, multi-level and multi-discipline design applied to a variety of problems, including mechanical components, such as gear design, as well as integrated systems. Particular emphasis is placed on structural optimization using the finite-element method of analysis. The laboratory's computational facilities include three enhanced IBM PC/AT microcomputers and a new Digital Equipment MicroVAX II computer. Additionally, remote access is provided to the College of Engineering VAX 11/780 research computer.

8. Rheology Laboratory. This laboratory contains experiments dedicated to the fluid flow and heat transfer of non-Newtonian fluids. In particular, viscoelastic fluids are studied using flow visualization during extensional flow. Investigation of the viscous behavior of these fluids is also conducted, both experimentally and theoretically. Planned additions to the laboratory include comprehensive experimental installations dealing with convective heat transfer and fluid friction for drag-reducing polymer solutions.

9. Materials Laboratory. Experimental and theoretical materials science research is carried out in a variety of areas, including mechanical, thermal, magnetic, and electronic properties of materials. Extensive equipment is available for studying the metallography and the mechanical behavior of materials at high temperatures. A scanning electron microscope, microhardness testers, and X-ray diffraction equipment are also available.

10. Materials Processing Laboratory. This laboratory supports theoretical and experimental work on the generation and control of fine microstructures in metals and ceramics by advanced solidification technologies. Major facilities include equipment for electrohydrodynamic atomization, arc-spray metallizing, melt spinning,



It is no coincidence that the ages of man are named after materials: the Stone Age, the Bronze Age, the Iron Age. The development of new materials paces new technology and affects our everyday existence. Today the new materials of interest to our advanced industries, such as electronics and aerospace, are complex combinations of semiconductors, ceramics, polymers, and metals. For example, new developments in compound semiconductors are central to high-speed computer technology, while new high-temperature composites based on ceramics and metallic compounds are needed for the next era of high-speed aircraft.

I came to UCSB from the University of California at Berkeley in 1985 to initiate a new program in Materials. The exciting challenge was to bring in faculty who had the breadth of knowledge and expertise needed to address research and teaching in advanced materials: individuals from physics, chemistry, electrical engineering, and mechanical engineering who have aptitude in materials research. Furthermore, these individuals had to be people who thrive on the stimulation that derives from working in multidisciplinary teams, a must in today's materials arena.

I believe that we have been eminently successful in bringing a world-class faculty to UCSB to work in our new materials department. This success has been reflected in our ability to attract major research support, as exemplified by the new Center for High-Performance Composites. I am proud and excited to be a part of this new department.

Anthony G. Evans
Professor and Chair
Department of Materials

◀ Before joining the University of California, first at Berkeley and now at Santa Barbara, Dr. Evans was a group leader and principal scientist at Rockwell International Science Center and the National Bureau of Standards, as well as at AERE Harwell in his native England. At UCSB, he holds the Alcoa endowed chair in Materials. He has received numerous awards and fellowships from the American Ceramic Society and has been honored as a distinguished professor and lecturer at Harvard, the University of Utah, and Case Western Reserve.

planar-flow casting, roll casting, and surface modification with high-energy beams, as well as conventional melting, casting, and heat treating. Additional facilities available for materials processing research include computers for process modeling, mechanical testing, and microstructural characterization equipment.

11. Ocean Engineering Laboratory. Research on environmental effects in the coastal zone and on the safety and reliability of marine structures is conducted in the Ocean Engineering Laboratory. Occupying 10,000 square feet in the new Engineering Research Centers building, the laboratory's facilities include the 70 x 3 x 3-foot sediment transport flume. This tilting flume can separate and recirculate sediment for study of bottom sediment transport. Designed as a multi-purpose facility, the flume can also operate as a recirculating flow channel with a 10-foot-long test section of one square foot which can be operated either closed or with an open free surface at speeds greater than 12 feet per second (supercritical). Thirdly, it is operated as a wave tank with the ability to combine wave and current studies. Finally, the carriage rails along the length of the flume permit continuous positioning of an instrument carriage, which in the future will allow the facility to be used also as a small towing tank. Data acquisition is performed from a centrally located computer and control room. Now in the design and construction stage is a 170 x 12 x 8-foot towing tank equipped with a three-dimensional wave maker of novel design. Experimental facilities in another location on campus include circular flumes for the study of sediment entrainment and deposition. Instruments include a laser Doppler velocimeter.

UNDERGRADUATE PROGRAM

Bachelor of Science—Mechanical and Environmental Engineering

Note: Schedules should be planned to meet both General Education and major requirements. Detailed descriptions of these requirements are presented elsewhere in this chapter and in the College of Engineering Announcement.

Preparation for the major. The following 99 units of lower-division courses are required: Engineering 3; Mechanical Engineering 14, 15; Chemistry 1A-B-C, 1AL-BL-CL; Mathematics 3A-B-C, 5A-B-C; English 2A-B (Communication Studies 10, 11, or 43 may be substituted for English 2B); ECE 6A-B; Physics 7A-B-C-D and 7CL-DL; plus 23 units of General Education requirements. (Physics 1,2,3,4, and 5 are acceptable alternates to the physics requirement.)

Upper-division major. The following 81 units are required: Mechanical Engineering 140A-B, 150, 151A-B-C, 151L, 152A-B, 152L, 155A, 155AL, 156A, 156AL, 156B or BL, 156C or CL, 157A, 163A-B, 163L, 180, 180L plus nine units of departmental electives and 15 units of general education or free electives. Requirements total 180 units.

The mechanical engineering elective courses permit students a degree of specialization in additional areas of dynamic systems, control and robotics; fluid mechanics; materials science and

engineering; ocean engineering; solid mechanics and structures; and thermal sciences.

Honors Program

Students with a minimum grade-point average of 3.4 in the major may apply, in the spring quarter of their junior year, for the honors program. To qualify for honors, students must carry out a specific project under the direct supervision of a faculty member or complete two graduate courses with a grade-point average of 3.3 or better.

GRADUATE PROGRAM

Master of Science—Mechanical and Environmental Engineering

Admission

In addition to the general requirements for admission to graduate status, the department requires a bachelor's degree or its equivalent from a school or college of recognized standing. Applicants with undergraduate preparation that is deemed inadequate may be required to take additional courses.

Degree Requirements

Students must choose a major field from among the six fields presently offered by the department:

- Dynamic systems, controls, and robotics
- Fluid mechanics
- Materials Science and Engineering
- Ocean Engineering
- Solid Mechanics and Structures
- Thermal Sciences

Two plans of study are offered, both requiring successful completion of 42 quarter-units of credit. Plan 1 is a combination of course work and research, culminating in the preparation of a thesis; Plan 2 involves course work and the completion of a written project.

Plan 1. Requires 42 units with thesis: 18 units of course work in major field (at least 12 units of core courses in major field, at most six units selected from a list of approved courses), nine units of approved elective courses in science and engineering, three units of graduate seminar in major field, 12 units of ME 598, and completion of thesis.

Plan 2. Requires 42 units without thesis: 21 units of course work in major field (at least 12 units of core courses in major field, at most nine units selected from a list of approved courses), 18 units of approved elective courses in science and engineering, three units of graduate seminar in major field, and completion of a project dealing with a topic in major field (should be done as part of major field graduate seminar requirement).

Doctor of Philosophy—Mechanical and Environmental Engineering

Admission

Acceptance for admission to the Ph.D. program is subject to the general admission requirements of the Graduate Division. In addition, a Master of Science degree or its equivalent with at least a 3.5 GPA is required.

Degree Requirements

The emphasis in the Ph.D. program is on the ability to correlate knowledge in the pursuit of original research. To be advanced to candidacy, a student must during the first two years of attendance at UCSB beyond the master's degree successfully pass a written qualifying examination, administered the first week of fall and spring quarters. The examination cannot be taken more than twice. Also, a dissertation proposal

must be presented by the student in an oral examination and approved by the student's dissertation committee.

Candidate must complete a minimum of 27 units of graduate course work in science and engineering beyond the M.S. degree. Credit may be requested for courses taken beyond the M.S. requirements at UCSB or at another accredited university offering a similar program. In addition to a declared major, the candidate must choose two minor areas of course work, at least one from among the six fields offered by the department. A departmental minor must include a minimum of three of the core courses in the corresponding field of specialization offered by the department. A minor taken outside the department must be approved by the candidate's dissertation committee or by the Graduate Requirements Committee. Candidate must maintain a graduate GPA of 3.5.

Candidate must complete a dissertation and pass a two-part defense examination consisting of a seminar talk and an oral examination conducted by the candidate's dissertation committee.

MECHANICAL AND ENVIRONMENTAL ENGINEERING COURSES

LOWER DIVISION

Engineering 3. Computer Solutions of Engineering and Science Problems

(3) Staff

Prerequisites: Mathematics 3A, can be taken concurrently. Limited to lower-division majors in engineering or consent of instructor; not open to students who have completed Computer Science 5FO.

Application of computers to engineering and scientific problems. Provides working knowledge of FORTRAN language programming, using a structured FORTRAN compiler. Students will use the computer. (F)

14. Statics

(3) Eberhart, Milstein

Prerequisites: Engineering 3, Physics 7A, Mathematics 3C. Open to ME majors only.

Free-body principle and Newton's third law, general force systems, distributed forces, internal forces, numerical and graphical solutions to three-dimensional problems in statics. (F,W)

15. Strength of Materials

(4) Eberhart

Prerequisites: Physics 7A, ME 14; Mathematics 5C may be taken concurrently. Open to ME majors only.

Hooke's law and properties of structural materials. Methods of sections and virtual work and energy methods. Design applications to engineering structures, problems of tension, torsion, flexure, and combined loading. Design beyond the elastic limit. (W,S)

95. Introduction to Mechanical Engineering

(1-4) Staff

Prerequisite: consent of instructor. May be repeated up to six units.

Participation in design projects in the laboratory or machine shop. Projects may be student- or faculty-originated depending upon student interest and consent of faculty member. Assistance to senior design project groups may also be acceptable with consent of the project faculty adviser. (Not offered 1987-88.)

96A-B. Engineering Graphics

(3-3) Staff

Prerequisite: consent of instructor. The class will be restricted in enrollment.

Graphical study of lines, surfaces, vectors, orthographic and pictorial drawings with dimensioning techniques, solutions of empirical data, and mathematical equations. Introduction to the design process, layout and working drawings, and computer graphics. (F,W)

UPPER DIVISION

Engineering 100. Engineering Economic Analysis

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

Engineering feasibility factors and engineering economic analysis. Analysis of alternatives and estimates of demands and costs in engineering. (F,S)

Engineering 101. Ethics in Engineering

(3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

The nature of moral value, normative judgment and moral reasoning. Theories of moral value. The engineer's role in society. Ethics in professional practice. Safety, risk, responsibility. Morality and career choice. Code of ethics. Case studies will facilitate the comprehension of the concepts introduced. (S)

Engineering 103. Technical Writing

(2-3) Staff

Prerequisite: upper-division standing in engineering or consent of instructor.

Writing and editing a variety of technical forms such as reports, articles, abstracts, and proposals. (Third unit awarded for additional writings.) (F,W,S)

111. Engineering Acoustics

(3) Mitchell

Prerequisite: ME 152A or consent of instructor.

Fundamentals of acoustics; physics of sound waves; architectural acoustics, reverberation, acoustical properties of materials, interaction of sound and structures; outdoor sound propagation, community noise levels and sources, transportation noise; noise and vibration level criteria; measurement techniques. (S)

112. Energy Conversion

(3) Marschall

Prerequisites: ME 151A, ME 151B concurrently, or consent of instructor.

Survey of energy resources of the earth, energy consumption, and energy conversion; resume of thermodynamics, quantum and statistical mechanics. Analysis of conventional vapor and gas cycles. Fundamentals, design, and application of direct energy converters such as fuel cells, magnetohydrodynamic power generators, thermoelectric generators, thermionic generators, photovoltaic generators, Nernst effect generators, electron convection converters, electrodynamic generators, electrokinetic, and piezoelectric converters. (W)

113. Desalination

(3) Marschall

Prerequisites: ME 151A, ME 151B concurrently, or consent of instructor.

Chemical and physical properties of ocean water, geothermal brine, and groundwater. Fundamentals of theories of distillation, freezing, reverse osmosis, electrodialysis, and other demineralization techniques. Design and application of desalination systems. Energy sources

for desalination. Efficiency and economy of desalination plants. (S)

114. Water Supply and Pollution Control

(3) Bruch

Prerequisite: ME 152A or consent of instructor. Water supply and quality requirements for domestic, industrial, agricultural, and recreational uses. Properties of natural surface and groundwaters. Pollutants in surface and groundwaters. Transport and fates of waterborne pollutants. Water and sewage treatment processes. Waste water reclamation. Water quality management in ground and surface water environments. (Not offered 1987-88.)

115. Introduction to Air Pollution Principles

(3) Staff

Prerequisites: ME 151A, ME 152A-B or consent of instructor.

Adverse effects, the atmosphere, macroscale motion, meso- and micrometeorology, effluent dispersion, sulfurous smog, photochemical smog, stationary sources and their control, emission formations in gasoline-powered engines, effects of design and operating variables on gasoline engine exhaust emissions, and present and future emission control systems for gasoline engines. (Not offered 1987-88.)

116. Fundamentals of the Internal Combustion Engine

(3) Yuen

Prerequisites: ME 151A-B-C; ME 152A-B.

Application of thermodynamics and fluid mechanics to internal combustion engines. Analysis of thermodynamics cycles (OHO and diesel) under actual engine operating conditions. Understanding of various engine components such as carburetor, intake manifold, exhaust manifold, and catalytic converter. Effects of engine operating parameters on auto emission. (Not offered 1987-88.)

118. Introduction to Physical Oceanography

(3) McLean

Prerequisites: Mathematics 5A-B-C or equivalent; ME 152A or equivalent.

Properties of sea water, basic physical principles and dynamics equations, currents with and without friction, stratified flow and thermohaline effects, waves and tides. Emphasis is on dynamics oceanography. (W)

119. Introduction to Coastal Engineering

(3) McLean

Prerequisites: Mathematics 5A-B-C or equivalent; ME 152A or equivalent.

Quantitative description of tides and waves, especially in the coastal zone. Refraction, reflection, and diffraction of waves, harbor resonance, and design, interaction of structures and waves, sediment and contaminant transport. (S)

120. Introduction to Marine Technology

(3) Staff

Prerequisites: ME 15 and ME 152A or equivalent.

Materials and corrosion. Pressure vessel technology. Surface ships. Submerged structures. Hydrostatics and hydrodynamics, cavitation. Dynamics of underwater vehicles. Propulsion and control. Life support systems. Communication. (S)

121. Introduction to Sediment Transport

(3) McLean

Prerequisite: ME 152A or equivalent.

Mechanics of particle-fluid interactions; initial motion; fluid lift and drag on sediment particles, critical shear stress, settling velocity. Transport equations; bed load and suspended load. Effect

of particles on the boundary layer flow. Bed forms; ripples and dunes. Fine grain sediment cohesion. (Not offered 1987-88.)

122. Turbomachinery

(3) Vanyo

Review of thermodynamics and fluid mechanics of turbomachinery, blade diagrams. Characteristics of compressors, pumps, blowers. Operating diagrams and selection based on requirements. Types of machines: radial, mixed, and axial flow. Applications: for example, turbo boosters for internal combustion engines. A design project will be required as part of this course. (F)

125A-Z. Special Topics in Mechanical Engineering

(3) Staff

Prerequisite: consent of instructor.

Individual courses each concentrating on one area in the following subjects: applied mechanics, CAD/CAM, controls, design, environmental engineering, fluid mechanics, materials science, mechanics of solids and structures, ocean and coastal engineering, robotics, theoretical mechanics, thermal sciences, and recent developments in mechanical engineering.

132. Celestial and Orbital Mechanics

(3) Vanyo

Prerequisites: Physics 7A and mathematics of the lower-division engineering curriculum.

Fundamentals of particle dynamics, two-body and central force problems, orbit determination, transfer orbits, orbital perturbation, re-entry dynamics, lunar and interplanetary trajectories. (S)

133. Rotating Fluids

(3) Vanyo

Prerequisites: ME 163A, ME 152A-B, or consent of instructor.

Review of classic rotating fluids analyses and experiments in the fields of oceanographics, atmospheric, space vehicles, and rotating machinery. Navier-Stokes equations transformed to a rotating coordinate system. Laminar and turbulent flows and boundary layer phenomena in rotating fluid systems. (W)

140A. Theoretical Analysis in Mechanical Engineering

(4) Bruch

Prerequisites: Mathematics 5A-B-C. Open to ME and ECE majors only.

Introduction to the mathematical models of engineering problems and the methods of solution. Applications to practical engineering field problems. Emphasis on analytical methods for ordinary and partial differential equations. (F)

140B. Theoretical Analysis in Mechanical Engineering

(4) Mitchell

Prerequisites: ME 140A. Open to ME and ECE majors only.

Introduction to the mathematical models of engineering problems and the methods of solution. Applications to practical engineering field problems. Emphasis on numerical methods for algebraic equations, ordinary and partial differential equations, probability and statistics. (W)

140C. Theoretical Analysis in Mechanical Engineering

(3) Bruch

Prerequisites: ME 140A, ME 140B or consent of instructor. Open to ME majors only.

Introduction to the mathematical models of engineering problems and the methods of solution. Applications to practical engineering field problems. Emphasis on advanced topics such as complex variables, calculus of variations, and integral transforms. (S)

150. Introduction to Design

(1) Staff

Prerequisites: four of the six courses ME 140A, 140B, ME 151A, 151B, ME 152A, 152B. Open to ME majors only.

Introduction to the design process. Ideal generation techniques: Brainstorming, synectics, morphological forced connections, etc. Conceptualization of a design project in preparation for ME 156. (S)

151A. Thermosciences

(4) Matthys

Prerequisites: upper-division standing. Open to ME and ECE majors only.

The basic laws and concepts of thermodynamics such as pressure, temperature, energy, and entropy are discussed, and their applications to various systems are considered. Consideration is given to the molecular structure and physical properties of the solid, liquid, and gaseous states. Introduction to vapor power cycles. (F)

151B. Thermosciences

(4) Yuen

Prerequisites: ME 151A. Open to ME majors only.

Application of basic thermodynamic principles and laws to energy conversion systems, gas mixtures, statistical thermodynamics, irreversible thermodynamics, conduction heat transfer. (W)

151C. Thermosciences

(3) Yuen

Prerequisites: ME 151B, ME 152A, ME 152B; ME 151L concurrently. Open to ME majors only.

The study of the fundamentals of heat transfer using the phenomena of conduction, radiation, and convection, application and analysis of steady state, transient, and combined mode problems. (S)

151L. Thermoscience Laboratory

(1) Matthys

Prerequisites: ME 151A, ME 151B; ME 151C concurrently. Open to ME majors only.

Experiments in heat transfer and thermodynamics. Characteristics of heat exchangers, and the performance of vapor and gas cycles will be determined. Flow over a heated cylinder and expansion and compression of gases will be studied. Heat transfer by conduction, and radiation will be investigated. Introduction to measuring techniques for the determination of mass and energy flow rates, Pressure, temperature, and heat transfer coefficients. (S)

152A. Fluid Mechanics

(4) Hickman

Prerequisites: lower-division courses in engineering, physics, and mathematics. Open to ME and ECE majors only.

Introduction to the fundamental concepts in fluid mechanics and basic fluid properties. Basic equations of fluid flow. Dimensional analysis and similitude. Hydrodynamics. (W)

152B. Fluid Mechanics

(3) Hickman

Prerequisite: ME 152A.

Incompressible viscous flow. Boundary-layer theory. Introductory considerations for one-dimensional compressible flow. (S)

152L. Fluid Mechanics Laboratory

(1) McLean

Prerequisites: ME 152A-B.

Use of laboratory models to simulate engineering and oceanic scale phenomena. Wind tunnel experiments to measure and analyze fluid motions, lift, and drag on scale models. Water channel experiments to measure and analyze sediment transport, waves, and turbulence.

Fluids in rotating machinery and geophysical systems. (F)

154. Introduction to Computer-Aided Design/Manufacturing

(3) Staff

Prerequisites: ME 14, 15, 140A-B, 151A-B-C, 152A-B, and ME 163A.

Introduction to computer-aided design program creation. A brief introduction to UNIX and Plot 10, applied to FORTRAN-based programs. Three-dimensional transfer. Motions and general rotation. Extensive project involvement is expected on the part of the students. (S)

155A. Control Systems Design

(3) Paden

Prerequisites: ME 140A-B, 151A-B-C, 152A-B, and ME 163A. Open to ME majors only.

Study of linear feedback systems, transfer functions, stability, root locus, Nyquist diagrams, frequency response, and state space techniques. Design and synthesis of control systems. (F)

155AL. Control Systems Design Laboratory

(1) Paden

Prerequisites: ME 155A concurrently. Open to ME majors only.

Design of feedback control system; feedback compensation to meet specified design criteria. (F)

155B. Control Systems Design

(4) Staff

Prerequisite: ME 155A, ME 155AL or consent of instructor.

State space analysis of feedback control system, controllability, observability, nonlinear systems, optimal control. Sampled data systems, including the design and laboratory implementation of microcomputer-controlled feedback control systems. (Not offered 1987-88.)

156A. Engineering Materials and Design Concepts

(2) Staff

Prerequisites: ME 15, 151A-B-C, 152A-B, 163A, and ME 180. Open to ME majors only.

Selection of engineering materials, machine shop procedure, the design of machine elements, gears, journal bearings, roller bearings, fatigue failure analysis, brakes, clutches. (F)

156AL. Engineering Materials and Design Concepts

(1) Staff

Prerequisites: ME 150; concurrent enrollment in ME 156A. Open to ME majors only.

Nature of engineering design. Carrying out of preliminary design. Continuation of design projects originated in ME 150. Machine shop procedures. (F)

156BL-CL. Design

(3-3) Staff

Prerequisites: ME 156A, ME 156AL. Open to ME majors only.

Continuation of design projects begun in ME 156AL. (W,S)

156B. Mechanical Engineering Design

(3) Staff

Prerequisite: ME 156A

Course consists of topics dealing with design of screws, fasteners and connections; welded, brazed and bonded joints; mechanical springs; rolling contact bearings; lubrication and journal bearings; spur gears; shafts, clutches, brakes, couplings and flywheels; and flexible mechanical elements. (W)

156C. Selected Topics in Design

(3) Staff

Prerequisite: ME 150, 156A, 156B, or equivalent.

General topics germane to modern design and topics of design techniques in specific engineering fields will be presented by guest lecturers. Subjects are expected to include: computer-aided design, selection of engineering materials, design optimization, controls, robotics, design of ocean structures, and others as time and availability of lecturers permit. (S)

156S. Introduction to Machine Shop

(1) Staff

Prerequisite: concurrent enrollment in the ME 156 sequence. Limited to 30 students and to declared majors in the field. Laboratory, 3 hours.

Use of the machine lathe, vertical mill, and other general machine shop tools will be presented through hands-on experience. This course should be taken by those ME upper-division students who expect to need machine shop skills for construction of their senior projects. (F,S)

157A. Design of Optimal Systems

(3) Staff

Prerequisites: ME 140A-B.

Application of operations research methods to the design, of engineering components and systems. Treatment of engineering design as a nonlinear constrained optimization problem. Algorithms for linear and nonlinear programming. Computer applications using a general purpose optimization program. (W)

157B. Design of Optimal Systems

(3) Staff

Prerequisites: ME 157A. Open to ME majors only.

Continuation of probability and statistical procedures. Application of computer simulation method to the design, optimization, and use of complex systems. (Not offered 1987-88.)

160. Gas Dynamics and Propulsion

(3) Staff

Prerequisites: ME 151A-B, ME 152A-B.

Resume of fundamentals of gas dynamics, thermodynamics, and combustion. Subsonic and supersonic two-dimensional flows. Method of characteristics. Normal and oblique shocks. Analysis of compressible flow through ducts, nozzles, and in gas turbines, rockets, and ramjets. (S)

162. Introduction to Elasticity

(3) Markenscoff

Prerequisites: ME 15, ME 140A-B.

Equations of equilibrium, compatibility, and boundary conditions. Solutions of two-dimensional problems in rectangular and planar coordinates. Eigen-solutions for the wedge and Williams' solution for cracks. Stress intensity factors. Extension, torsion and bending. Energy theorems. Introduction to wave propagation in elastic solids. (Not offered 1987-88.)

163A. Engineering Mechanics

(4) Staff

Prerequisites: Physics 7A, 7B, Mathematics 5A, 5B, and ME 14. Open to ME and ECE majors only.

Kinematics and dynamics for two- and three-dimensional motion. Newton's laws, momentum, work, energy, and power. Applications to mechanisms, machine elements, dynamic balancing, and gyroscopic motion. (F)

163B. Engineering Mechanics

(3) Kokkinis

Prerequisites: ME 140A-B and ME 163A.

Topics relating to vibration in mechanical systems; exact and approximate methods of analysis, matrix methods, generalized coordinates

and Lagrange's equations, applications to systems with several degrees of freedom and to continuous systems. (F)

163L. Engineering Mechanics Laboratory

(1) Kokkinis

Prerequisites: ME 163B may be taken concurrently. Open to ME majors only.

Experimental and computer design laboratory which applies the basic principles of mechanics to vibrations, orbital dynamics, structural response, wave propagation. Includes introduction to instrumentation. (W)

166. Advanced Strength of Materials

(3) Eberhart

Prerequisites: ME 15 and ME 140A.

Analysis of statically determinate and indeterminate systems using integration, area moment, and energy methods. Beams on elastic foundations, curved beams, stress concentrations, fatigue, and theories of failure for ductile and brittle materials. Photoelasticity and other experimental techniques are covered, as well as methods of interpreting in-service failures. (W)

167. Matrix Analysis of Mechanical and Structural Systems

(3) Bayo

Prerequisites: ME 15 and 140B. ME 166 recommended.

Computer-oriented course for the analysis of structural systems composed of bars and beams using matrix manipulation. Formation of stiffness and flexibility matrices. Matrix formulation of the equations of equilibrium and compatibility. Displacement (stiffness) and force (flexibility) methods. (F)

170A. Introduction to Robotics: Robot Mechanics

(4) Staff

Prerequisites: ME 163A; ECE 147A-AL or ME 155A-AL; or consent of instructor.

Prerequisites may be taken concurrently. This course is the same as ECE 181A.

Overview of robot kinematics and dynamics. Structure and operation of industrial robots. Robot performance: workspace, velocity precision, payload. Comparative discussion of robot mechanical designs. Actuators. Robot coordinate systems. Kinematics of position. Dynamics of manipulators. (F)

170B. Introduction of Robotics: Robotic Sensing

(4) Staff

Prerequisite: ECE 181A or ME 170A; or consent of instructor. ECE 178 recommended.

This course is the same as ECE 181B. Overview of robot sensing technology. Mechanical, acoustic, thermal, electric, magnetic, optical, and chemical sensors. Characteristics of sensor devices. Emphasis on visual sensors. Description, recognition, and understanding of images. Design emphasis on integrating different types of sensors on one robot or robot system. (W)

170C. Introduction to Robotics: Robot Control

(4) Staff

Prerequisites: ECE 181A or ME 170A; ECE 181B or ME 170B; and ECE 147B-BL; or consent of instructor. *This course is the same as ECE 181C.*

Overview of robot control technology from open-loop manipulators and sensing systems, to single-joint servovalves and servomotors, to integrated adaptive forces and position control using feedback from machine vision and touch sensing systems. Design emphasis on accurate tracking accomplished with minimal algorithm complexity. (S)

180. Introduction to Materials

(3) Levi

Prerequisite: upper-division standing in engineering. (Formerly ME 159.) This course is the same as Nuclear Engineering 180.

Introduction to the structure and properties of engineering materials and the principles underlying structure-property relationships. Crystal structure, defects, phase equilibria, diffusion and phase transformation kinetics, mechanical behavior and strengthening mechanisms, and the effects of processing and environment on structure and properties. (S)

180L. Materials Laboratory

(1) Levi

Prerequisites: ME 180 (may be taken concurrently). Open to Mechanical Engineering, Chemical Engineering, and Nuclear Engineering majors only. This laboratory is required for Mechanical Engineering majors.

Experiments illustrating the fundamentals of structure and properties of materials, as well as the relationships between properties, structure, processing, and environmental interactions. Spatial arrays and imperfections, phase equilibria and structural transformations, mechanical behavior, corrosion, and effects of processing on structure.

185. Materials in Engineering

(3) Staff

Prerequisite: Mechanical Engineering 180, or Nuclear Engineering 180, or equivalent. This course is the same as Nuclear Engineering 185.

This course will introduce the student to the main families of materials and the principles behind their development, selection, and behavior. It will discuss the generic properties of metals, ceramics, and polymers more relevant to mechanical engineering applications. The relations of properties to structure and processing will be emphasized in every case. (F)

193. Internship in Industry

(3) Staff

Prerequisite: consent of instructor. Prior departmental approval needed. Cannot be used as a departmental elective. May be repeated to a maximum of six units.

Special projects for selected students offered in conjunction with industrial practice in selected industrial and research firms, under direct faculty supervision. (F,W,S)

195. Directed Research

(3) Staff

Prerequisite: consent of instructor. This course cannot be used as a departmental elective and may not be repeated beyond a total of six units.

Special research projects open to selected students. Research projects are to be arranged by student and supervising faculty. The course is designed to give qualified undergraduates early experience in research. (F,W,S)

199. Independent Studies in Mechanical Engineering

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in mechanical and environmental engineering. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. This course cannot be repeated beyond a total of six units. Consent of instructor required.

Directed individual study, normally experimental. (F,W,S)

GRADUATE COURSES**201. Advanced Dynamics**

(3) Mitchell

Prerequisites: ME 163A-B-L or equivalent.

Advanced dynamics of mechanical systems, variational techniques. Hamilton's principle, Lagrange's equations, conservation theorems, matrix kinematics, and dynamics of rigid bodies in general motion. (F)

202. Advanced Dynamics

(3) Mitchell

Prerequisite: ME 201.

Variational principles; normal modes; Liapunov stability; Hamiltonian Mechanics; contact transformations, Hamilton-Jacobi, and Eikonal equations, adiabatic invariants; ensembles and Liouville's theorem. (W)

203. Nonlinear Mechanics

(3) Kokkinis

Prerequisite: ME 201.

Phase plane analysis, criteria of stability, study of Van der Pol, Duffing, Mathieu equations, Poincare-Bendixson theorem, method of Krylov-Bogoliuboff, equivalent linearization perturbation methods. (Not offered 1987-88.)

204. Numerical Modeling in Physical Oceanography

(3) Staff

Prerequisites: introductory courses in fluid mechanics and applied mathematics.

Numerical models of currents, waves, tides, temperatures, salinity, the transport of sediments and contaminants, and the transport of turbulence will be reviewed and discussed. Both finite difference and finite element models will be included but the emphasis will be on physical and mathematical modeling principles and applications rather than on mathematical details. Applications to oceans and lakes will be discussed. (Not offered 1987-88.)

205. Perturbation Methods in Applied Mathematics

(3) Lick

Prerequisites: ME 140A-B or equivalent.

An introduction to perturbation (approximation) methods used in applied mathematics and engineering. Specific topics will include regular and singular perturbations which depend on a small parameter or coordinate, approximate and asymptotic solutions of ordinary and partial differential equations, asymptotic evaluation of integrals, method of matched asymptotic expansions, N-timing and multiple-scaling methods, and coordinate stretching methods. (S)

214. Rotation of Nonrigid Bodies and Fluids

(3) Vanyo

Prerequisite: consent of instructor.

Review dynamics of general rigid body motion. Extension to nonrigid bodies. Rotating fluids, vorticity, and secondary flows. Application to geophysics (e.g., oceanographics), space vehicles, and rotating machinery. (S)

219. Continuum Mechanics

(3) McMeeking

Prerequisites: ME 152A-B or equivalent. Same course as Materials 207.

Matrices and tensors, stress deformation and flow, compatibility conditions, constitutive equations, field equations and boundary conditions in fluids and solids, applications in solid and fluid mechanics. (F)

222. Compressible Flow

(3) Lick

Prerequisites: ME 151A-B or equivalent, ME 219.

Review of one-dimensional and oblique shock waves. Prandtl-Meyer expansion. Method of characteristics for two-dimensional steady, one-dimensional unsteady, and axisymmetric flow. Crocco's theorem. Viscous compressible boundary layer. (S)

223. Turbulent Flow

(3) McLean

Prerequisites: ME 152A-B or equivalent.

Nature and origin of turbulence, boundary layer mechanics — law of the wall, wakes, and jets, transport of properties, statistical description of turbulence, measurement problems, stratification effects. Application of principles to practical problems will be stressed. (W)

224. Physical Gas Dynamics

(3) Hickman

Prerequisites: ME 222 and ME 251.

Behavior of equilibrium and nonequilibrium gas flows at very high temperatures including vibrational, translational, chemical, and radiative effects. (F)

225AA-ZZ. Special Topics in Mechanical Engineering

(3) Staff

Prerequisite: consent of instructor.

Specialized courses dealing with advanced topics and recent developments in one or more of the following areas: dynamic systems, control and robotics, fluid mechanics, materials science and engineering, ocean engineering, solid mechanics and structures, thermal sciences.

226A. Applied Numerical Methods

(3) Lick

Prerequisites: ME 140A-B or consent of instructor.

An introduction to the numerical solution of ordinary and partial differential equations by means of finite difference and finite element procedures. (F)

226B. Applied Numerical Methods

(3) Bruch

Prerequisite: ME 226A or consent of instructor.

Weighted residual and finite element methods for the solution of partial differential equations with application to problems in fluid mechanics, heat flow, and mass transport. (W)

227A. Fluid Dynamics

(3) McLean

Prerequisites: ME 152A-B or equivalent.

Fundamentals of fluid dynamics, mostly incompressible: deformation and stress in general fluids, conservation statements and fundamental laws of motion for gases and liquids, vorticity, vector fields, singularities, analytic function methods applied to a variety of planar flows. (F)

227B. Fluid Dynamics

(3) Lick

Prerequisite: ME 227A.

Inviscid flow: mapping and thin body theory applied to airfoils and cavitating flows; flow modeling, separated flows and wakes, self-similarity, water entry. Viscous effects: deviatoric stresses, linear fluids, vortex straining and diffusion, dimensional methods, exact viscous flows, laminar boundary layer. (W)

227C. Waves in Fluids

(3) Tulin

Prerequisites: ME 227A-B, or consent of instructor.

General theory of acoustic and dispersive wave systems; surface gravity waves in the linear and non-linear regime; shallow water effects; the

dam break; ship waves; breaking and ocean wave spectra; acoustic wave propagation; near and far fields; shock waves. (S)

229. Seminar in Fluid Mechanics

(3) Tulin

Prerequisite: consent of instructor.

Lectures by resident and guest speakers on the various facets of fluid mechanics, emphasizing historical perspectives, industrial applications, and research frontiers. Students, as members of small teams, will carry out engineering projects, deliver oral presentations and prepare a final written report. (W)

230. Elasticity

(3) McMeeking

Prerequisite: ME 219. Same course as Materials 230.

Review of the field equations of elasticity. Energy principles and uniqueness theorems. Elementary problems in one and two dimensions. Stress functions, complex variable methods and three-dimensional potential functions. Fundamental solutions in two and three dimensions. Approximate methods. (W)

231. Seminar in Solid Mechanics and Structures

(3) Markenscoff

Prerequisite: consent of instructor.

Lectures by resident and guest speakers on the various facets of solid mechanics and the theory of structures, emphasizing historical perspectives, industrial applications, and research frontiers. Students, as members of small teams, will carry out engineering projects, deliver oral presentations, and prepare a final written report. (W)

232. Plasticity

(3) McMeeking

Prerequisite: ME 230. Same course as Materials 232.

Elastic, plastic, creep, and relaxation behavior of solids. Formulation of the mechanics of inelastically strained bodies, plastic stress-strain laws, yield functions, and flow potentials. Torsion and bending of prismatic bars, expansion of thick spherical and cylindrical shells, plane plastic flow, slip line theory. Variational formulations, approximate methods. (S)

234A. Structural Dynamics

(3) Thomson

Prerequisites: ME 163A, ME 163B and ME 166. Formulation of the equations of motion for free and forced response of single and multi-degree of freedom systems and for distributed-parameter systems. Modal analysis. Approximate solution techniques. Numerical algorithms. Damping. (F)

234B. Probabilistic Theory of Structural Dynamics

(3) Kokkinis

Prerequisite: ME 234A.

Statistical and spectral description of random processes. Correlation and spectral density. Response of linear dynamic systems to random loading. Crossing rates and distribution of peaks and maxima. Fatigue and failure under random loading. Long-term description: statistics of extremes. (W)

239. Conduction Heat Transfer

(3) Matthys

Prerequisite: undergraduate course in heat transfer.

Development of mathematical representation of conduction heat transfer and techniques available for analytical, analog, and numerical solutions. (W)

240. Convective Heat Transfer

(3) Marshchall

Prerequisite: undergraduate course in heat transfer.

Solutions to the momentum, continuity, and energy equations will be considered for both natural and forced convection. Applications to industrial problems, convective transfer in high-speed flows, heat transfer in rarefied flows, and the effects of chemical reactions on convective rates will be included. (W)

241. Radiative Energy Transfer

(3) Yuen

Prerequisite: undergraduate course in heat transfer.

The physical nature of radiation and of its interaction with matter, conservation principles in radiative transfer and their relation to molecular and convective processes, and thermodynamic equilibrium with consideration of nondimensional parameters will be considered. Applications to astrophysics, combustion, and plasma technology will be discussed. (F)

242. Seminar in Thermal Sciences

(3) Matthys

Prerequisite: consent of instructor.

Lectures by resident and guest speakers on the various facets of thermal sciences, emphasizing historical perspectives, industrial applications and research frontiers. Students, as members of small teams, will carry out engineering projects, deliver oral presentations, and prepare a final written report. (S)

245. Numerical Methods for Free and Moving Boundary Problems

(3) Bruch

Prerequisite: some knowledge of finite difference and finite element methods.

A basic introduction to functional analysis. Formulation and numerical solutions for free and moving boundary problems with applications to such problems as steady and unsteady seepage, jets and cavities, melting and solidification of pure metals and alloys that freeze over a range of temperatures, etc. (S)

250. Advanced Thermodynamics

(3) Marschall

Prerequisites: ME 151A-B.

An extended treatment of the fundamentals of classical thermodynamics, including availability and reversibility, the chemical potential, properties of matter, thermochemistry, chemical equilibrium of real gases and gas mixtures. (F)

251. Statistical Thermodynamics

(3) Yuen

Prerequisites: ME 151A-B.

An extended treatment of the fundamentals of statistical thermodynamics, equilibrium distributions, properties of gases, liquids, and solids. (S)

252. Computational Fluid Dynamics

(3) Lick

Prerequisite: ME 226A or equivalent.

Numerical modeling of fluid flows. Basic difference equations for mass, momentum, and energy conservation. Discussions of appropriate boundary conditions. Applications to incompressible and compressible flow, aerodynamics, free-surface flows, lake and ocean currents. (S)

255A. Automatic Feedback Control

(3) Paden

Prerequisites: ME 163B, 155A, or equivalent.

Automatic feedback control systems; examples, fundamental concepts, classification, mathematical description. Methods of analysis and compensation for linear and nonlinear systems.

Basic design procedures. Adaptive and optimal control. (W)

255B. Nonlinear Control Systems

(3) Paden

Prerequisite: ME 255A, Mathematics 101B, or consent of instructor.

Review of ordinary differential equations; existence and uniqueness of solutions. Linearization techniques. Various notions of stability and the determination of stability using Lyapunov or energy functions. Applications to the control of mechanical systems with an emphasis on the control of robot manipulators. (S)

257. Optimization of Engineering Design

(3) Vanderplaats

Prerequisites: ME 157A-B or equivalent.

Analytical and computer optimization techniques applied to engineering designs and systems. Includes advanced topics in operations research and computer simulation methods integrated with classical optimization techniques of calculus and numerical methods. Individual projects will be assigned to apply optimization techniques to an engineering design or system in an area where the student is already technically competent. (Not offered 1987-88.)

258. Optimum Structural Design

(3) Vanderplaats

Prerequisites: ME 157A or ME 257, ME 226A or equivalent.

Synthesis of structural systems; design oriented analysis; design as an optimization task, fully stressed design, optimality criterion methods, mathematical programming methods. Application to mechanical, aeronautical, civil, and ocean structures. (Not offered 1987-88.)

260A. Materials Structures and Bonding

(3) Milstein

Same course as Materials 204.

Crystal structures (Miller indices, Bravais lattices, symmetry operations, bases, crystal diffraction, reciprocal lattices, Brillouin zones); elements of statistical thermodynamics and quantum mechanics; ionic, covalent, and metallic bonding.

261. Seminar in Materials Science and Engineering

(3) Milstein

Prerequisite: consent of instructor.

Lectures by resident and guest speakers on the various facets of materials science and engineering, emphasizing historical perspectives, industrial applications, and research frontiers. Students, as members of small teams, will carry out engineering projects, deliver oral presentations, and prepare a final written report. (S)

262. Metallurgical Thermodynamics

(3) Milstein

Prerequisites: ME 151A-B or equivalent, ME 159 or equivalent.

Laws of thermodynamics; thermodynamic functions; elements of statistical thermodynamics; statistical interpretation of entropy; heat capacity; phase equilibria and stability; gases, solutions and condense phases; reaction equilibrium; phase diagrams. (Not offered 1987-88.)

263. Mechanical Behavior of Materials

(3) Evans

Same course as Materials 205.

Mechanics of brittle and ductile fracture. Fracture resistance of materials. Characteristic flaws and crack initiation. Fracture statistics. Stress corrosion cracking and hydrogen embrittlement. Fatigue crack propagation. Creep and creep rupture processes. (F)

268. Materials Processing

(3) Levi

Prerequisites: ME 159 or equivalent; ME 140A or equivalent or consent of instructor.

Fundamentals of transport phenomena, thermodynamics and kinetics applied to materials processing. Analysis of solidification in crystal growth, castings, ingots and rapid solidification processes. Microsegregation and macrosegregation. Plane front, cellular and dendritic growth. Solidification under severe non-equilibrium conditions. (W)

271. Finite Element Structural Analysis

(3) Bayo

Prerequisites: ME 140C or ME 167; ME 219 or equivalent.

Definitions and basic element operations. Displacement approach in linear elasticity. Element formulation: direct methods and variational methods. Global analysis procedures: assemblage and solution. Plane stress and plane strain. Solids of revolution and general solids. Isoparametric representation and numerical integration. Computer implementation. (W)

272. Advanced Finite Element Structural Analysis

(3) Bayo

Prerequisite: ME 271 and 234A.

Computer techniques for linear dynamic analysis of structures. Solution of large eigenvalue problems. Step-by-step integration of equations of motion. Analysis of structures with material and/or geometric nonlinearities. Computational techniques and computer program development. Iteration and step-by-step strategies. (S)

274. Theory of Shell Structures

(3) Markenscoff

Prerequisites: ME 219, 230 or equivalent.

Fundamental equations for deformation of thin shells with small deflections. Approximate theories, including membrane theory and bending theory. Circular cylindrical shells, and shells of revolution. Finite element analysis of shell structures. Applications to the analysis of tubular joints for offshore structures. (W)

275A. Fracture Mechanics

(3) Markenscoff

Prerequisite: ME 230.

Analytic solutions of a stationary crack under static loading. Elastic and elastoplastic analysis. The J integral. Energy balance and crack growth. Criteria for crack initiation and growth. Dynamic crack propagation. Fatigue. The micromechanics of fracture. (S)

275B. Advanced Fracture Mechanics

(3) Staff

Prerequisite: ME 275A.

Theoretical and experimental basis for theories of crack propagation in nonlinear or inhomogeneous materials. Topics selected from: elastoplastic fracture mechanics in large scale yielding; stable elastoplastic crack growth; creep cracking; cracks near bimaterial interfaces; stress corrosion cracking; and others. (F)

276. Theory of Elastic Stability

(3) Markenscoff

Prerequisites: ME 163A, ME 166 or equivalent.

Concepts of stability of equilibrium and motion in mechanical systems, geometric nonlinearities, conservative and follower forces, buckling of bars, plates and shells. Quasi-linear approach and nonlinear methods. Post-buckling behavior and imperfection sensitivity. Dynamic instabilities. Inelastic buckling. (Not offered 1987-88.)

277. Stress Waves in Solids

(3) Markenscoff

Prerequisites: ME 219, ME 230 or equivalent.

Longitudinal and shear waves in solids. Reflection and refraction at an interface. Rayleigh waves. Sudden application of point and line loads on a 3-D and a half-space. Incident wave on a stationary crack. Propagation in bounded media (bars, plates). (F)

281. Analysis and Design of Marine Structures

(3) Staff

Prerequisites: ME 234A, ME 234B.

Different types of offshore structures. Statistical description of sea states. Wave forces on offshore structures. Effects of current and wind. Response of offshore structures to environmental loads. Quasi-static vs. dynamic approach. Deterministic vs. stochastic approach. Risk analysis: state-of-the-art, codes, current practice and tendencies. (S)

289. Ocean Engineering: The Future

(3) Staff

Prerequisite: graduate or upper-division standing.

Lectures by resident and guest speakers on the various facets of ocean engineering, emphasizing new prospects and possibilities. Students, as members of small teams, will carry out research on feasibility studies and prepare oral reports and a final twenty page paper. (S)

290. Seminar in Dynamic Systems, Control, and Robotics

(3) Staff

Prerequisite: consent of instructor.

Lectures by resident and guest speakers on the various facets of the theory of dynamic systems, control, and robotics, emphasizing historical perspectives, industrial applications, and research frontiers. Students, as members of small teams, will carry out engineering projects, deliver oral presentations, and prepare a final written report. (S)

291. Optimal Control of Dynamic Systems

(3) Armand

Prerequisites: ME 163B and ME 155A, or equivalent.

Introduction to the classical calculus of variations. Optimization problems for dynamic systems with terminal and path constraints. Necessary and sufficient conditions. Neighboring extremal paths and the second variation. Singular

solutions. Numerical solutions of optimal control problems. Applications to engineering systems. (Not offered 1987-88.)

501. Teaching Assistant Practicum

(1-4) Staff

Normally required of students serving as teaching assistants. Will not count as unit credit towards the M.S. in mechanical engineering.

Practical experience in the various activities associated with teaching, including lecturing, supervision of laboratories and discussion sections, preparation and grading of home work and exams. (F,W,S)

503. Research Assistant Practicum

(1-4) Staff

Will not count as unit credit towards M.S. or Ph.D. degree in mechanical engineering

Practical experience in the various activities associated with research, including experimental work, theoretical work and analyses, and assisting department faculty and other professional researchers in their duties. (F,W,S)

596. Directed Reading and Research

(3) Staff

Prerequisite: consent of instructor. Cannot be used as part of the course requirements towards the M.S. and Ph.D. degree. S/U grading.

Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the department chair. (F,W,S)

597. Individual Study for Ph.D. Qualifying Examination

(1-12) Staff

Prerequisite: graduate standing. No unit credit allowed toward advanced degree. Maximum of 12 units per quarter; enrollment limited to 24 units per examination. Instructor is normally student's major adviser. S/U grading.

Individual studies for Ph.D. qualifying examination. (F,W,S)

598. Master's Thesis Research and Preparation

(1-12) Staff

Prerequisite: consent of thesis adviser. No unit credit allowed toward advanced degree. For research underlying the thesis and writing of the thesis. (F,W,S)

599. Ph.D. Dissertation Research and Preparation

(1-12) Staff

Prerequisite: consent of dissertation adviser. No unit credit allowed toward advanced degree. For research and preparation of the dissertation. (F,W,S)

College of Letters and Science

College of Letters and Science, Cheadle Hall, Second Floor
 Faculty and Administrative Matters, Cheadle Hall 2217; Telephone (805) 961-3506
 Undergraduate Advising, Cheadle Hall 2119; Telephone (805) 961-2038
 Provost: David A. Sprecher
 Dean, Basic Skills Development: William S. Wise
 Associate Dean, Student Affairs: W. Douglas Morgan
 Associate Dean, Academic Affairs: Ursula R. Mahlendorf
 Assistant Dean, Academic Advising: David M. Kohl



As a composer writing music in the twentieth century, I rely upon the newest technologies for creating sound. Computers are very effective tools for composition, since they allow you to analyze and re-synthesize the microstructure of any sound. One can restructure the order of the instrumental universe by designing totally new instruments, such as "oboe-marimba-violins" or "underwater flutes." The ability to move sound anywhere within a three-dimensional space helps give music dimensions that were impossible to obtain in the past.

UCSB offers the proper innovative and cross-disciplinary environment for undertaking such new directions in music. The presence of a high-technology community in a liberal arts environment has made it possible for me to establish a new, world-class multimedia facility for composition and acoustics research. One of the most exciting aspects of building the facility was the enthusiasm and knowledge-sharing between myself and professors from the sciences and other humanities areas.

UCSB offers a unique community of minds whose disciplines transcend traditional curriculum boundaries. The level of support at UCSB for this type of new research allows students to thrive in a fast-paced, interdisciplinary environment, which is the latter half of the twentieth century.

JoAnn Kuchera-Morin

JoAnn Kuchera-Morin
 Assistant Professor
 Department of Music
 Director, Center for Computer Music
 Composition

The College of Letters and Science is the largest center of teaching, learning, and research on the UCSB campus and the third largest in the University of California system. The college serves over 14,500 undergraduates, and offers nearly 80 majors, including a number of interdisciplinary programs.

The College of Letters and Science is characterized by its academic diversity and strength as well as its special attention to undergraduates. The college curriculum provides opportunities for exploration and intellectual breadth through completion of the General Education program, and for depth through the acquisition of the intellectual skills, perceptions, and methodologies of a specific academic discipline.

The college office offers academic advising and direction. Four faculty members from diverse disciplines serve as assistant deans and are available in the college office for consultation on a variety of academic matters. Peer and college advisers are available to students for individual consultations, and they conduct a number of small group meetings and workshops throughout the year. The college publication, the *Letters and Science Announcement*, is sent automatically to freshmen and other new students.

The College of Letters and Science offers four bachelor's degrees: the

Bachelor of Arts, the Bachelor of Science, the Bachelor of Fine Arts, and the Bachelor of Music. A full list of degrees and majors available is presented in the first chapter of this catalog. (See "The University of California, Santa Barbara.")

Any student who is admissible to the university may be accepted by the College of Letters and Science provided that the college does not have more qualified applicants than openings, in which case preference will be given to advanced-standing students who are ready to enter the upper division, and to freshmen. Further, if the number of qualified applicants at either the junior or freshman levels exceeds the number of openings, admission to specific departments within the College of Letters and Science may be based on consideration of prior course work, scholastic achievement, examination scores, or other factors.

DEGREE REQUIREMENTS

The bachelor's degree requirements for students in the College of Letters and Science are the following:

General University Requirements

Subject A - English Composition
American History and Institutions
Academic Residence
Grade-Point Average

General Education Requirements

Major Requirements

Unit Requirements

General university requirements are described in the chapter of this catalog called "Undergraduate Education at UCSB," major requirements are described under each department and program, and General Education and unit

◀ Dr. Kuchera-Morin has written for string orchestra, clarinet, flute, organ, percussion, and computer. Her works include *Aquatones*, *Tachyons*, *Yugen*, and most recently *Dreampaths*, a commissioned opera for seven singers, Oriental instruments, and computer-generated tape. For the last three years, she has been responsible for designing UCSB's graduate and undergraduate curriculum in computer music and analog electronic music.

requirements are described in the following sections of this chapter.

GENERAL EDUCATION REQUIREMENTS

The aim of the General Education program in the College of Letters and Science is to provide a body of knowledge of general intellectual value that will give the student a broad cultural base. The program stresses an appreciation of the humanities and the fine arts, as well as an understanding of the natural and social sciences.

Students in the College of Letters and Science must complete the General Education requirements appropriate to their degree (B.A., B.S., B.F.A., or B.M.), in order to qualify for graduation. There are two General Education programs in effect for students in the College of Letters and Science, the old General Education program and the new General Education program.

Students who were first-term freshmen before fall 1985 may fulfill the General Education program in effect before fall 1985 (the old General Education program).

Students who were first-term freshmen in fall 1985 or later must fulfill the General Education program that went into effect in fall 1985 (the new General Education program).

All transfer students entering UCSB in fall 1988 or later must fulfill the new General Education program.

Requirements may be satisfied with courses completed on the UCSB campus, with equivalent courses completed at another accredited institution, or by means of College Entrance Examination Board Advanced Placement credit. A list of courses satisfying the various General Education area requirements follows below.

NEW GENERAL EDUCATION PROGRAM

Students should refer to the paragraphs above to determine whether they are eligible to fulfill the requirements for the new General Education program.

General Provisions Governing All Degree Candidates

1. Courses in the student's major can also be used to fulfill requirements in Areas C, D, E, or F.

2. Courses offered by a single department, including the student's major department, can be applied to only one of the four area requirements C, D, E, and F. (Example: If History 4A is used for Area E-1, then History 17A cannot be used for Area D-4.)

Exception: If English 60 is applied to Area E, then English can also be applied to Area F-2a. Please read the narrative under each area heading below for further restrictions. Students are also cautioned to review course prerequisites before enrolling.

3. Courses taken to satisfy the General Education requirements may also be applied simultaneously to the American History and Institutions requirement. (Refer to page 20.)

4. A course listed in more than one area can be applied to only one area. (Example: Art History 6A cannot be applied to both E-1 and F-1.)

Bachelor of Arts Degree

In the process of fulfilling the new General Education area requirements, students must take the following:

1. At least six courses that require the writing of one or more papers totaling at least 1,800 words. Courses applicable to this requirement are listed below. Once a student has matriculated at UCSB, the writing requirement may be met only with designated UCSB courses.

2. At least one course that focuses on a non-Western culture. Courses applicable to this requirement are listed below.

3. At least one course from Area C emphasizing quantitative relationships. Courses applicable to this requirement are listed below.

AREA A — ENGLISH READING AND COMPOSITION

English 2A-B or two equivalent semester or quarter courses of at least three semester- or four quarter-units each are required.

Students who have not met the freshman English requirement at the time of admission must fulfill English 1 within two quarters, English 2A within three quarters, and English 2B within five quarters of their admission to UCSB. (Failure to complete these requirements within the time allotted will make students ineligible for continued registration at UCSB.) Once class space has been obtained in

English 1, 2A, or 2B, the course cannot be dropped.

AREA B — FOREIGN LANGUAGE

This requirement must be fulfilled by all students who were first-term freshmen in fall 1986 or later, or who transfer to UCSB in fall 1989 or later. The foreign language requirement may be satisfied in one of the following four ways:

1. By completing Language 3 (third quarter) at UCSB or its equivalent at another college or university. Students fulfilling Area B with this method will require 184 overall units and 166 Letters and Science List units to fulfill degree requirements.

2. By achieving a CEEB Achievement Test score of 500 or higher or a CEEB Advanced Placement Examination score of 3 or higher in a foreign language.

3. By completing the third year of one language in high school with a grade-point average for third-year language of at least B-.

4. By passing a UCSB foreign language placement examination at the appropriate level.

AREA C — SCIENCE, MATHEMATICS, AND TECHNOLOGY

Three courses are required, each representing a different scientific discipline. One course must be from Area C-1; one course must be from Area C-2; the third course can be from Area C-1, C-2, or C-3 provided that it is in a discipline different from the other two courses taken. Please note that in Area C-1, biology, botany, and zoology are considered different disciplines. The discipline of Natural Science 1A is physics, the discipline of Natural Science 1B is chemistry, and the discipline of Natural Science 1C is biology.

C-1: The Biological Sciences.

Biology 11A-B, 20, 23, 24, 25, 28; Botany 20; Chemistry 142A; Geology 30, 111; Natural Science 1C; Zoology 25, 40.

C-2: The Physical Sciences.

Astronomy 1; Chemistry 1A+1AL, 25; Geography 3; Geology 2, 4, 101, 123; Natural Science 1A, 1B; Physics 1, 6A+6AL, 7A, 10, 11.

C-3: A Third Scientific Discipline.

Anthropology 5; Computer Science 5AA-ZZ; Economics 5; Environmental Studies 12, 13, 115; Geography 119; History 106C; Linguistics 115;

Mathematics 3A, 7A, 34A, 109A;
Philosophy 183; P/STAT 33;
Psychology 106.

AREA D — SOCIAL SCIENCES

One course must be taken from three of the four areas. The three courses must be from different departments.

D-1: The Individual in Society.

Anthropology 129; Geography 153; Linguistics 131; Psychology 1, 101, 102, 103, 105, 107, 108; Religious Studies 15; Sociology 2, 142, 152A, 154A, 170.

D-2: The Shaping of Human

Cultures. Anthropology 2, 3, 4, 102, 108, 109, 110, 114, 122, 123, 131, 134, 135, 136, 137, 141, 142, 144, 147, 148A, 149, 171; Asian American Studies 100A-B, 120; Black Studies 1A, 121, 130A, 130B; Chicano Studies 1A, 141, 144, 175; Environmental Studies 11, 122, 130A-B, 164; Geography 106, 150, 155; German 33, 147; History 72, 78, 105, 107S, 131F, 159A-B, 174A-B, 175A-B; Japanese 140, 150; Linguistics 130; Political Science 102, 120, 154, 171; Religious Studies 7, 40, 115A, 131F, 131H, 151A-B, 152; Sociology 1, 111, 123, 125, 126, 128, 131, 131H, 132, 133, 134, 153, 155A, 164, 166, 180A.

D-3: Economic Systems. Economics 1, 2, 109, 110; Geography 5; History 127, 167B, 167D; Political Science 185.

D-4: Political Systems. History 7, 17A-B-C, 171A-B, 172A-B; Law and Society 1; Political Science 1, 2, 12, 109, 113, 115, 121, 127, 129, 130, 135, 136, 146, 147, 150A, 151, 152, 158.

AREA E — CIVILIZATION AND THOUGHT

Three courses must be taken. Two must be adjacent quarter courses from E-1. The third course may be from Area E-1 or E-2.

E-1: Western Civilization. Art History 6A-B-C; Comparative Literature 30A-B-C; English 60A-B-C; History 4A-B-C; Philosophy 21A-B-C.

E-2: World Civilizations and Thought.

Black Studies 1C, 5; Classics 100A-B, 101, 106; German 108A-B, 167, 178; History 8, 46, 49, 80, 86, 90, 101A-B-C, 114A-B-C, 125A-B, 144; Italian 106X-Y; Japanese 32; Mathematics 13; Music 17; Philosophy 1, 1HS, 2, 3, 4, 5, 25, 32, 100A-B-C-D-E, 112, 115; Political

Science 187, 188, 189; Portuguese 125A-B; Religious Studies 1, 3, 5, 6, 8, 12, 20, 21, 25, 50, 116A, 130, 164A; Russian 33; Spanish 118A-B, 180.

AREA F — THE ARTS AND LITERATURE

Two courses must be taken from F-1, each from a different discipline: aesthetics, art history, art studio, dance, dramatic art, film studies, and music. One course must be taken from F-2a and one course must be taken from F-2b.

F-1: The Arts.

Aesthetics: Philosophy 136.

Art History: Art History 1, 6A-B-C-D-F-G, 7E, 150, 155B, 156B, 157A-B-C, 158A-B, 159A-B-D-E-F, 160B-C, 161A-B-H, 164F-G; Classics 180D.

Art Studio: Art Studio 4, 9, 20, 125.

Dance: Dance 45, 145A-B.

Dramatic Art: Dramatic Art 5, 12, 60, 61, 102, 106, 155, 160A-B-C-D-E-F, 162.

Film Studies: Film Studies 46, 101A-B, 120, 123, 133, 136, 146, 165, 175, 191, 193.

Music: Black Studies 114, 144; Music 11, 15, 16, 112A-B-C-D-E-F, 114, 115, 116, 117, 118A-Z, 119.

F-2a: English or American Literature.

English 10, 20, 30, 40, 113, 115, 117A-B-E, 120, 124, 126A-B-C-D, 128, 130A-B-C, 131, 133A-B-D, 135, 137, 138A-B-C, 141, 145, 146, 150, 152A, 153, 154, 157, 162, 165AA-ZZ, 170, 172, 177, 178, 179, 180, 181, 187, 189, 191, 192; Philosophy 146A.

F-2b: Literature of a Non-English Language.

Readings in English: Chinese 110A-B, 111, 112, 115A-B, 145; Classics 36, 37, 38, 40, 102, 130; Comparative Literature 100, 127; English 116A, 116B, 116C, 144, 184; French 106X, 150X, 164X, 170X-Y-Z, 174X, 180X; German 161, 162, 163, 168, 169, 173, 174, 174E, 177, 192; History 174E, 192; Italian 116Y, 139X-Y-Z; Japanese 110A-B, 112; Philosophy 146B; Portuguese 114, 115, 120; Russian 115A-B, 125, 131; Spanish 115A-B, 120A-B, 142, 171.

Readings not in English: Chinese 124A-B, 132A-B; French 136A-B-C-D, 140B-C, 150A-B, 170A-B-C, 180A-B-C; German 100, 115A-B-C, 126, 127A, 130, 142, 146, 148;

Portuguese 105A-B-C, 106A-B-C, 185; Russian 122, 123; Spanish 30.

COURSES THAT APPLY TO THE WRITING REQUIREMENT

Courses noted on the list below (except those marked with an asterisk) may apply to Areas C-F as well as to the writing requirement. At least six courses that require the writing of one or more papers totaling at least 1,800 words must be taken. Once a student has matriculated at UCSB, the writing requirement may be met only with designated UCSB courses.

Anthropology 4, 122, 123, 135, 141, 163, 171; Art History 6A-B-C-G, 150, 155B, 156B, 158A-B, 159A-B-D, 160B-C, 161H, 164G; Black Studies 1A, 130A-B; Chicano Studies 175; Classics 38, 102; Comparative Literature 127; Dance 145A-B; Dramatic Arts 61, 106, 155, 160 A-B-C-D-E-F; English 10, 20, 30, 40, 42, * 60A-B-C, 106, * 106WP, * 113, 115, 116A-B-C, 117A-B-E, 120, 124, 126A-B-C-D, 128, 130A-B-C, 131, 133A-B-D, 135, 137, 138A-B-C, 141, 145, 146, 150, 152A, 153, 154, 157, 162, 165AA-ZZ, 170, 172, 177, 178, 179, 180, 181, 187, 189, 191, 192; Environmental Studies 11, 122, 130A-B, 164; Film Studies 101A-B, 120, 123, 133, 136, 146, 165, 189, 191, 193; French 106X, 136A-B-C-D, 140B-C, 150A-B-X, 170A-B-C, 170X-Y-Z, 174X, 180A-B-C-X; German 33, 147, 148, 163, 169, 173, 174E; History 4A-B-C, 7, 8, 49, 72, 80, 90, 114A-B-C, 125A-B, 131F, 159A-B, 167B-D, 171A-B, 172A-B-E, 174E; Italian 106X-Y, 116Y, 139X-Y-Z; Japanese 32, 110A-B, 112, 140, 150; Linguistics 131; Music 112A-B-C-D-E-F, 115, 117, 118A-Z; Philosophy 1, 1HS, 2, 4, 5, 21A-B-C, 25, 32, 100A-B-C-D-E, 112, 115, 136, 146A-B; Political Science 1, 2, 102, 113, 129, 136, 151, 152, 154, 185; Portuguese 114, 115, 120, 125A-B; Religious Studies 3, 7, 116A, 130, 131F, 151A-B, 164A; Sociology 2, 123, 125, 128, 153, 154A, 170; Spanish 115A-B, 118A-B, 120A-B, 142, 171, 180.

COURSES THAT APPLY TO THE REQUIREMENT IN QUANTITATIVE RELATIONSHIPS

At least one course from Area C which emphasizes quantitative relationships is required.

Astronomy 1; Chemistry 1A + 1AL, 25; Computer Science 5AA-ZZ; Economics 5; Environmental Studies 115; Geology 2, 4; Mathematics 3A,

7A, 34A; Natural Science 1A-B; Physics 1, 6A+6AL, 7A, 10, 11; P/STAT 33.

COURSES THAT APPLY TO THE NON-WESTERN CULTURE REQUIREMENT

At least one course that focuses on a non-Western culture is required.

Courses noted on the list below also may apply to Areas D, E, and F. Refer to above General Education list for specifics.

Anthropology 2, 102, 108, 110, 114, 122, 131, 136, 137, 141, 142, 144, 148A, 163, 171; Art History 6D, 7E; Asian Studies 120; Black Studies 1C, 130A-B, 144; Chinese 110A-B, 111, 112, 115A-B, 124A-B, 132A-B, 145; Environmental Studies 122, 130A-B; Film Studies 120; History 46, 49, 80, 86, 90, 144; Japanese 32, 110A-B, 112, 140, 150; Philosophy 2; Political Science 135, 136, 146, 147, 150A; Religious Studies 3, 20, 21, 131H, 164A; Sociology 131H.

Bachelor of Science Degree

Candidates for the Bachelor of Science degree need not meet the requirements in the area of their major (C: Science and Technology, or D: Social Sciences), but will be responsible for Area A and, for students entering as freshmen in fall 1986 or later, Area B; Area C or D (whichever is not the area of their major); and Area E or F, as specified for the Bachelor of Arts degree.

Students must take at least four General Education courses that require the writing of one or more papers totaling at least 1,800 words. Once a student has matriculated at UCSB, the writing requirement may be met only with designated UCSB courses. These courses are identified on the list of courses that apply to the writing requirement.

Bachelor of Fine Arts Degree; Bachelor of Music Degree

Candidates for the degree of Bachelor of Fine Arts or Bachelor of Music must complete the following area requirements: Area A; Area B (applies only to students who enter as first-term freshmen in fall 1986 or later); one course from Area C-1; one course from Area C-2; Area D or Area E; one course from Area F-2a; and one course from Area F-2b.

Students must take at least four General Education courses that

require the writing of one or more papers totaling at least 1,800 words. Once a student has matriculated at UCSB, the writing requirement may be met only with designated UCSB courses. These courses are identified on the list of courses that apply to the writing requirement.

OLD GENERAL EDUCATION PROGRAM

Students should refer to the text on page 82 to determine whether they are eligible to fulfill the requirements for the old General Education program.

Bachelor of Arts Degree

AREA A — ENGLISH READING AND COMPOSITION

English 2A-B or two equivalent semester or quarter courses of at least three semester- or four quarter-units each.

Students who have not met the freshman English requirement at the time of admission must fulfill English 1 within two quarters, English 2A within three quarters, and English 2B within five quarters of their admission to UCSB. (Failure to complete these requirements within the time allotted will make students ineligible for continued registration at UCSB.) Once class space has been obtained in English 1, 2A, or 2B, the course cannot be dropped.

AREA B — SCIENCE, MATHEMATICS, AND ENGINEERING

Three courses from Area B, including at least two from B-1.

Two equivalent transfer courses of three or more semester-units each from B-1 will fulfill this requirement entirely. A laboratory or demonstration section is strongly recommended.

Area B-1: Astronomy; Biology (except 11Z, 121, and 193); Botany; Chemistry (except 20); Geology (except 121); Mathematics (except 1, 1M, 1S, 2, 2M, 2S, 15, 15S, 100A-B, 105); Natural Science 1A-B-C; Physics; Probability and Statistics (except 5); Zoology.

Area B-2: Anthropology 5, 105, 121, 151, 152A-B, 180A-B; Chemical Engineering 10, 120A, 130A, 130D, 150A, 157, 160; Chemistry 20; Computer Science; Electrical and Computer Engineering 1, 5, 15A-B, 130A-B-C, 150, 151, 152A-B, 154, 158, 170; Engineering 3; Environmental Studies 12, 13, 105, 109, 110, 115, 120, 144; Geography 3, 102, 110, 112, 114, 119, 123,

136A-B, 151, 163, 164, 166, 167, 168, 169, 170; Interdisciplinary Studies 15A-B; Mechanical Engineering 110, 118, 119, 152A-B, 157A-B; Nuclear Engineering 10, 111, 121, 122; Psychology 106, 113A-B-L, 132, 133A-B, 137, 137L.

AREA C — FINE ARTS

Two courses (of at least three semester- or quarter-units) from one or more of the following: Art History (except 160D, 161H, and 193); Art Studio 9, 20, 125; Black Studies 114, 142, 143, 144; Chicano Studies 142, 143, 145, 146, 186A-B, 188A-B-C; Classics 180A-B-D; Dance 45, 45M, 145A-B, 150; Dramatic Art 46S, 60, 60S, 61, 102, 103, 105A-B-C, 106, 117, 148, 155, 156, 160A-B-C-D-E-F, 161A-B, 162, 164; Film Studies 46, 47, 101A-B-C, 120, 123, 125A-B, 128, 130, 132, 133, 136, 137, 138, 140, 143, 146, 151A-B-C-D, 155AA-ZZ, 157, 159, 160, 165, 170, 175, 180, 187AA-ZZ, 189, 190, 191, 192, 193; French 178X-Y-Z, 184X-Y-Z, 187, 187X-Y, 188X, 189Y-Z; German 180Z; Italian 150X, 180X-Y-Z, 181X, 188X-Y; Music 15, 16, 17, 114-119, 170, 190; Portuguese 128; Scandinavian 140, 145; Sociology 151; Spanish 126, 127, 174 (174 in Spanish).

AREA D — HUMANITIES

Three courses from one or more of the following. Two equivalent transfer courses of at least three semester-units each will fulfill this requirement entirely. Levels 1, 2, 3 (or equivalent) in a foreign language will not apply to this requirement.

Arabic (Religious Studies 10D-E-F); Black Studies 38, 113, 124, 127, 128, 129 130A-B, 132, 133A-B-C, 134, 135A-Z; Chicano Studies 12, 120, 121, 180, 181, 190; Chinese; Classics (except 180A-B-D); Communication Studies 10, 11, 12, 43, 88, 89, 106, 108, 109, 110, 111, 113, 115, 116, 121, 122, 125, 129, 133, 139, 141, 142, 143, 144, 150, 151, 152, 156, 157, 158, 161, 164, 165, 172; Comparative Literature; Eastern Languages 130; English (except 1, 2A-B, 41, 101, 109A-B-C-D, and 110AA-ZZ); Environmental Studies 106, 108, 157, 158, 159; French (except 188, 190Y and those in Area C); German (except 14M, 40, 137, 147, 160D, 174E, 180Z, 187, 192); Greek (except 10A-B); Hebrew; Interdisciplinary Studies 40; Italian (except those in Area C); Japanese (except 150); Latin (except 10A-B); Linguistics (except English as a

Second Language courses, 30, and 116); Philosophy; Portuguese (except 10 and 128); Religious Studies (except 10A-B-C and 131H); Russian (except 33); Scandinavian (except 140 and 145); Semitic Language; Spanish (except 40 and those in Area C); Swedish 10A-B-C.

AREA E — HISTORY, SOCIAL SCIENCE, AND PSYCHOLOGY

Three courses from one or more of the following, including at least one from Area E-1. Two equivalent transfer semester courses of at least three semester-units each will fulfill this requirement entirely if at least one is from E-1.

Area E-1: Anthropology (except those in Area B-2 and 113); Chicano Studies 110; Economics (except accounting, 106, 121, 149, 186A-B, and 193); Geography 5, 7, 101, 106, 107, 109, 117, 141, 145, 146, 148, 150, 153, 154, 155, 157, 159, 162, 183, 185, 190, 192; History (except 10, 124A-B-C, 168A-B-Q, 174E, 192); Political Science (except 174); Psychology (except 5, 90AA-ZZ, 91A-B-C, and those in Area B-2); Sociology (except 113, 115, 131H, 134F, 144, 151, 190A-B, 191A-B, 192, 193).

Area E-2: Asian American Studies 100A-B, 110, 120, 146, 190; Black Studies 1A-B-C, 4, 5A-B, 20, 25, 101, 102, 103, 104, 105, 110, 111, 121, 123, 126, 150, 160C, 170, 171, 191AA-ZZ; Chicano Studies 1A-B-C, 102A-B, 105, 115, 140, 141, 147, 150A-B-C, 164, 168A-B-Q, 169, 170A-B, 171, 172, 174, 175, 178, 189, 191AA-ZZ; Communication Studies 107, 112, 114, 117, 123, 124, 126, 134, 135, 140A-B-C, 170; Environmental Studies 11, 111, 112A-B, 113, 116, 121, 122, 123, 125, 126A-B, 130A-B-C, 132, 133, 134, 135, 136, 137, 138, 140, 141, 150, 151, 155, 161, 163A-B, 164, 165A-B, 177, 180, 181; Film Studies 124, 163; German 137, 147; History 168A-B-Q; Interdisciplinary Studies 120; Japanese 150; Law and Society 1, 100, 190; Political Science 174; Russian 33.

Bachelor of Science Degree

The requirements for the Bachelor of Science degree are the same as those presented earlier for the Bachelor of Arts degree, with two exceptions: (1) B.S. degree students must choose a total of five courses from Area B, at least four of which must come from Area B-1. (2) B.S.

degree students must complete only two of the three Areas C, D, and E.

Bachelor of Fine Arts Degree

The requirements for the Bachelor of Fine Arts degree are the same as those presented earlier for the Bachelor of Arts degree.

Bachelor of Music Degree

The requirements for the Bachelor of Music degree are the same as those presented previously for the Bachelor of Arts degree, with three exceptions: (1) B.M. degree students must choose a total of only two courses from Area B, at least one of which must come from Area B-1. (2) B.M. degree students must complete only one course from Area C. (3) B.M. degree students must complete only two courses each from Areas D and E, at least one of which must come from Area E-1.

Regulations Governing Selection of Courses — Old General Education Program

1. Courses selected must be at least three quarter-units each and must be in the 1-193 number sequence at UCSB. Variable-unit courses such as Mathematics 3S must be completed in three-unit increments in order to apply to these requirements.
2. Courses selected for these requirements must be on the Letters and Science List of Courses described below.
3. Courses offered by the student's major department will not apply to Area B, C, D, or E requirements if the student's major is departmental. Students with double majors, interdepartmental majors, or individual majors may use appropriate major classes to satisfy General Education requirements. Courses required for the major that are offered by other departments will apply to appropriate General Education requirements.
4. Courses that bear a common departmental designation can be applied to only one of the four Areas B, C, D, or E.
5. Freshman seminar courses will not apply to any General Education requirement.
6. Courses used for the General Education requirements may be taken on either the letter grading option or the passed/not passed grading option if the option is available.

7. Courses used to satisfy the American History and Institutions requirement may be applied simultaneously to the General Education Areas B, C, D, and E.

HONORS

The College of Letters and Science is committed to academic excellence and offers students with records of superior scholarship a number of special opportunities.

College of Letters and Science Honors Program. The College Honors Program permits students to intensify their educational experience, to pursue individual excellence, and to participate in a small community atmosphere within the larger university setting throughout their four years of undergraduate study. College Honors Program participants benefit from increased contact with both faculty and peers in small classes and special programs.

Freshman and sophomore honors program students may enroll in special sections of the large introductory courses that provide preparation for their major or fulfill General Education area requirements.

Upper-division College Honors Program students may design their own honors contract courses and independent studies courses, and have special research opportunities available to them. In addition, they may participate in the departmental senior honors programs described below.

Honors program participants enjoy graduate library privileges, preferential enrollment in honors classes, eligibility for honors research awards, use of the honors study lounge, and special advising services.

The College Honors Program is open to any student with a minimum UCSB grade-point average of 3.5 on at least 16 graded baccalaureate units. Entering freshman students will be invited to join if their scholastic achievement fulfills the college's minimum designated criteria. Students may continue as program members as long as they maintain the required grade-point average and participate in program activities. A minimum grade of B is required for the honors designation to be assigned to a course.

A College Honors certificate will be awarded by the provost of the College

of Letters and Science to graduating seniors who have completed 36 units of honors-designated courses with at least a B grade and with an overall grade-point average of 3.5.

Departmental senior honors programs. Most departments in the college sponsor honors programs that provide opportunities for research and independent study in the major field. Honors program members are usually selected at the end of their junior year. They devote much of their senior year to the design and completion of an original research project or senior thesis. Honors program participants are granted special UCSB Library privileges normally available only to graduate students. In addition, they are eligible to apply for the President's Undergraduate Fellowships to help defray the expenses of their projects. In 1986-87, a total of \$28,000 from these fellowships was divided among 73 UCSB students.

Dean's Honors. The award of Dean's Honors is granted at the end of each quarter to those students who earn a grade-point average of 3.75 or higher for the quarter, on a program of 12 or more graded units. Part-time students may qualify for Dean's Honors if they earn the necessary grade-point average on 12 graded units during a period of two or more consecutive quarters. The receipt of Dean's Honors is recorded permanently on the transcript. Receipt of I or NP grades disqualifies students from eligibility for Dean's Honors for the quarter in which such grades are assigned.

Honors at graduation. Students with outstanding academic achievement are honored at the time of graduation. College Honors are awarded to those Letters and Science undergraduates who have completed 135 or more graded units in the University of California with a grade-point average of at least 3.85. General honors at graduation are awarded to the top 20 percent of students who complete at least 76 graded units in the University of California, as follows. The top 2.5 percent receive Highest Honors; the next 6 percent receive High Honors; and the next 11.5 percent receive Honors. Members of departmental honors programs who complete their project or thesis with distinction are eligible for nomination by their departments for the award of Distinction in the Major.

Provost's Honors Council. The Provost's Honors Council is a group of approximately 50 undergraduates, primarily juniors and seniors, with records of scholastic excellence. The council is selected from nominations submitted by department chairs and by the college office. The council provides a forum for the exchange of information and ideas on academic matters. Council members may continue to serve until the time of their graduation.

ACADEMIC PROGRAMS AND OPTIONS

Options for Accelerated and Independent Study

Qualified students may accelerate their progress through portions of the undergraduate curriculum by presenting excellent scores on the College Entrance Examination Board (CEEB) Advanced Placement Examinations, by performing well in various departmental placement examinations in fields such as foreign languages, fine arts, and mathematics, and by earning credit

for university courses by examination. These options are described in the "Undergraduate Education at UCSB" chapter of this catalog.

Qualified students may enroll in advanced, upper-division courses even as first-term freshmen, provided they have fulfilled the course prerequisites or have obtained the instructor's permission. Upper-division students with excellent academic records may enroll in special studies courses 198 and 199. Exceptionally qualified seniors are sometimes encouraged to enroll in graduate courses.

Advanced Placement Credit

Students who complete special advanced placement courses in high school and who earn scores of 3, 4, or 5 on the College Entrance Examination Board Advanced Placement Examination taken before high school graduation will receive four or eight units of credit toward graduation at UCSB for each such test completed with the required scores, provided scores are reported to the Office of Admissions. The specific unit

Advanced Placement Credit—Old General Education Program			
Advanced Placement Exam with score of 3, 4, or 5	Units awarded	Old General Education course credit	UCSB course equivalent (You may not enroll in these courses for credit at UCSB.)
American History	8	E1: 2 courses	(no equivalent)
Art History	8	C: 2 courses	Art History 1
* Art Studio			
General Portfolio	8	none	Art 5A
Drawing Portfolio	8	none	Art 5A
Biology	8	B1: 2 courses	Biology 20; Natural Science 1C
Chemistry	8	B1: 2 courses	Chemistry 25, Natural Science 1B
Computer Science	4	B2: 1 course	Computer Science 5PA
* English Composition and Literature or Language and Composition			
With score of 3	8		English 1
With score of 4	8	English 2A	English 2A
With score of 5	8	English 2A-B	English 2A-B
European History	8	E1: 2 courses	(no equivalent)
French Language			
With score of 3	8	D: 2 courses	French 1-5
With score of 4 or 5	8	D: 2 courses	French 1-6, 26
French Literature			
With score of 3	8	D: 2 courses	French 1-5
With score of 4 or 5	8	D: 2 courses	French 1-6, 26, 101
German Language or Literature			
With score of 3	8	D: 2 courses	German 1-5
With score of 4 or 5	8	D: 2 courses	German 1-6
Latin: Vergil	4	D: 1 course	Latin 1-3, 50
Latin: Catullus-Horace	4	D: 1 course	Latin 1-3, 50
* Mathematics-Calculus AB	4	B1: 1 course	Mathematics 1, 1M, 1S, 3A, 3S (first 4 units), 7A, 14, 15, 15S, 34A, or equivalent
* Mathematics-Calculus BC	8	B1: 2 courses	Mathematics 1, 1M, 1S, 3A-B, 3S (first 8 units), 7A-B, 14, 15, 15S, 34A-B, 34S (first 8 units), or equivalent
* Music-Listening and Literature	8	C: 2 courses	Music 15, 16
* Music-Theory	8	none	Music 11
* Physics-B	8	B1: 2 courses	Physics 10, Natural Science 1A
* Physics-C (Mechanics)	4	B1: 1 course	Physics 1, 6A, 7A
* Physics-C (Elect. and Magnetism)	4	B1: 1 course	Physics 3, 6B, 7B
Spanish Language			
With score of 3	8	D: 2 courses	Spanish 1-5
With score of 4 or 5	8	D: 2 courses	Spanish 1-6
Spanish Literature	8	D: 2 courses	(no equivalent)

*A maximum of 8 units EACH in art studio, English, mathematics, music, and physics is allowed.

values assigned to each test, and the applicability of this credit to the General Education requirements, are presented in the accompanying charts. Note, however, that Advanced Placement credit earned prior to entering the university will not be counted toward maximum unit limitations either for selection of a major or for graduation.

Accelerated Study Access Program

The Accelerated Study Access Program (ASAP) in the College of Letters and Science allows highly qualified junior and senior high school students in the Santa Barbara area to enroll simultaneously in their home schools and at UCSB. ASAP participants are admitted to the University of California in freshman standing, and they have access to nearly the entire range of academic resources of the campus. They may enroll in any UCSB course for which they are qualified, and they will receive full university credit for each course completed. When they have graduated from high school, ASAP members may continue their education at UCSB, or they may be eligible for admission to another campus of the University of California or to any other institution of higher education for which they are qualified. Brochures describing the program, eligibility requirements, and application procedures are available from the college office.

The Letters and Science Program

Freshman and sophomore students who have not yet selected a major will be part of the Letters and Science Program. While they are in this program, they are encouraged to take courses in a variety of departments to help them to develop their interests and to learn about the range of academic opportunities available at UCSB. The College of Letters and Science, and many individual academic departments, offer special advising services to undeclared students to help them make sound academic decisions. All students are expected to select a major by the time they have completed 90 quarter-units.

Individual Major

Highly motivated students with excellent academic records who find that no single major accommodates their specific interest in a given subject may propose an individual

Advanced Placement Credit—New General Education Program			
Advanced Placement Exam with score of 3, 4, or 5	Units awarded	New General Education course credit	UCSB course equivalent (You may not enroll in these courses for credit at UCSB.)
American History	8	none	(no equivalent)
Art History	8	F-1: 1 course	Art History 1
* Art Studio			
General Portfolio	8	none	Art 5A
Drawing Portfolio	8	none	Art 5A
Biology	8	C-1	Biology 20; Natural Science 1C
Chemistry	8	C-2**	Chemistry 25, Natural Science 1B
Computer Science	4	C-3**	Computer Science 5PA
* English Composition and Literature or Language and Composition			
With score of 3	8		English 1
With score of 4	8	English 2A	English 2A
With score of 5	8	English 2A-B	English 2A-B
European History	8	E-2	(no equivalent)
French Language			
With score of 3	8	B	French 1-5
With score of 4 or 5	8	B	French 1-6, 26
French Literature			
With score of 3	8	B	French 1-5
With score of 4 or 5	8	B	French 1-6, 26, 101
German Language or Literature			
With score of 3	8	B	German 1-5
With score of 4 or 5	8	B	German 1-6
Latin: Vergil	4	B	Latin 1-3, 50
Latin: Catullus-Horace	4	B	Latin 1-3, 50
* Mathematics-Calculus AB	4	C-3**	Mathematics 1, 1M, 1S, 3A, 3S (first 4 units), 7A, 14, 15, 15S, 34A, or equivalent
* Mathematics-Calculus BC	8	C-3**	Mathematics 1, 1M, 1S, 3A-B, 3S (first 8 units), 7A-B, 14, 15, 15S, 34A-B, 34S (first 8 units), or equivalent
* Music-Listening and Literature	8	F-1: 1 course	Music 15, 16
* Music-Theory	8	none	Music 11
* Physics-B	8	C-2**	Physics 10, Natural Science 1A
* Physics-C (Mechanics)	4	C-2**	Physics 1, 6A, 7A
* Physics-C (Elect. and Magnetism)	4	C-2**	Physics 3, 6B, 7B
Spanish Language			
With score of 3	8	B	Spanish 1-5
With score of 4 or 5	8	B	Spanish 1-6
Spanish Literature	8	B	(no equivalent)
*A maximum of 8 units EACH in art studio, English, mathematics, music, and physics is allowed.			
** Also satisfies the quantitative relationship requirement in Area C.			

major, provided that sufficient courses exist in the college to support such study. Proposals for individual majors are prepared with the guidance of a faculty member, and they are examined for cogency and academic merit by the provost and the Executive Committee of the college, which has final approval authority.

Minimum qualifications for proposing an individual major include a grade-point average of at least 3.0 and residence in the college for at least three quarters. Final proposals for individual majors must be submitted not later than the end of the junior year. However, students are urged to discuss their ideas with a college adviser well before then, to allow sufficient time for preparation, review, and approval of the proposal. Normally, this process takes at least three months. Information sheets describing the individual major option are available in the college office.

Double Majors

Students with interest and talent in two separate major fields have the option

of proposing a double major. If the proposal is approved by the department chairs involved and by the provost of the college, the student becomes responsible for completing all requirements for each major, normally by the time 200 units have been taken. No more than 8 units may be applied simultaneously to the upper-division requirements of the two majors.

ACADEMIC POLICIES AND PROCEDURES

Change of Major

Upon completion of any prerequisites for admission to the major, students may petition to change their major. The petition should be filed not later than the end of the junior year, and requires the approval of the chair of the prospective department and the provost of the college. Normally students should be able to fulfill all degree requirements, including those for the new major, by the time they have completed 200 units.

Unit Requirements

In order to be eligible for graduation, students must complete at least the following: 184 total units (180 if new General Education Area B has been met prior to admission or if old General Education requirements are being followed); 166 units selected from courses on the Letters and Science List of Courses (162 if new General Education Area B has been met prior to admission or if old General Education requirements are being followed); 60 upper-division units selected from courses on the Letters and Science List of Courses.

Students must earn a specified number of these units while in residence at UCSB. See the section titled "University Bachelor's Degree Requirements" for details.

There is no limit on the number of courses that may be taken passed/not passed during a single quarter. Nevertheless, at the time of graduation, students must have earned at least two-thirds of their units at UCSB on a letter-grade basis.

Certain courses designated by the college as remedial are offered for work-load credit only, and do not figure in the calculation of the total number of units needed for a degree.

Letters and Science List of Courses

At least 166 units from the Letters and Science List of Courses are required. All courses in the College of Letters and Science (except Linguistics 7 and 8, certain military science courses, and all physical activities courses) are on the Letters and Science List of Courses. The following courses outside the college, and the following approved military science courses, are also on the Letters and Science List:

- Chemical Engineering 10, 110A-B, 120A-B-C, 128 130A-B-C-D, 140A-B, 150A-B, 157, 159A-B, 160, 180A-B, 182, 198
- Computer Science (all courses)
- Creative Studies courses
- Education 109, 114, 125, 165
- Electrical and Computer Engineering 1, 5, 15A-B, 130A-B-C, 150, 151, 152A-B, 154, 158, 170
- Engineering 3

- Mechanical and Environmental Engineering 110, 118, 119, 152A-B, 157A-B
- Military Science 1A-B-C, 7, 8, 9, 11
- Nuclear Engineering 10, 111, 121, 122

Courses that do not appear on the Letters and Science List will apply to the total units required for graduation but will not apply to the 60 upper-division or the overall Letters and Science unit requirements described above.

If a non-Letters and Science course is either required for or accepted into the major, it will be counted as if it were a Letters and Science course at the time of the student's graduation, and thus will apply to the appropriate Letters and Science unit requirements.

Upper-Division Courses

Sixty upper-division Letters and Science units are required. UCSB courses on the Letters and Science List are considered upper-division if they are numbered 100-199. All courses in the College of Creative Studies, except those entitled General Studies, are considered upper-division Letters and Science courses.

Transfer students from community colleges should take particular note of the upper-division unit requirement. Students transferring from other colleges or schools in which they have earned credit for a substantial number of courses considered non-Letters and Science, such as agriculture or journalism, should review the Letters and Science unit requirements and plan their programs at UCSB accordingly.

Community College Credit Limit

After completion of 105 or more cumulative quarter-units, or 70 semester-units, in the university and all other colleges combined, no additional unit credit will be accepted for any courses completed subsequently at a community (two-year) college. Courses completed thereafter at community colleges may apply to specific subject requirements as appropriate, but not to unit requirements.

Physical Activities Credit Limit

No more than six units of one-half unit physical activities courses, or equivalent transfer courses, will be

accepted toward the 180 total units required for graduation.

200-Unit Enrollment Limit

Students are normally expected to complete all of their degree requirements by the time they have undertaken 200 total units. Units earned through CEEB Advanced Placement examinations will not be calculated in this 200-unit minimum. If enrollment beyond this limit is necessary or desirable, students may often obtain approval by submitting a Proposed Schedule for Graduation to the provost of the college, giving their reasons for continued enrollment and outlining their proposed programs.

PREPARING FOR CAREERS AND GRADUATE AND PROFESSIONAL SCHOOLS

While enrolled in the College of Letters and Science, students have access to career planning advice, and they can prepare for admission to a variety of graduate and professional programs offered by the University of California and other colleges and universities. To assist them in the process, the college provides pre-professional advising in a number of fields. Students are invited to discuss their plans with the college pre-professional adviser and to use the resources of the college office and of Counseling and Career Services, Building 599. A microfiche collection of two-year, four-year, graduate, and professional school catalogs is located in the college office.

CAREER PLANNING

Counseling and Career Services, Building 599, is of particular assistance to students who are searching for a rewarding career. The center offers individual counseling, workshops, a computerized System of Interactive Guidance (SIGI), and a self-directed career search system (*Voyages*) using video cassettes to help students match personal characteristics with possible careers. The Career Resource Room in Counseling and Career Services has career literature available for review. The Placement Center also has information on current employment opportunities in a variety of fields. Several full-time advisers assist students individually and offer workshops in such areas as resume writing and interviewing skills. Among useful, career-related publications in the UCSB Library are the *College*

Placement Annual, which includes the addresses of many corporate and governmental agencies that recruit graduates, and the *Bluebook of Occupational Education*, which describes the background required for certain careers and lists schools that offer programs in preparation for specific vocations.

GRADUATE PROGRAMS

Departments and major committees at UCSB have specially appointed faculty members who are prepared to discuss their own graduate programs, specializations available, and admission requirements, including courses and majors required. They are often able to provide general information about other graduate schools in their areas of specialization.

All college advisers have a general knowledge of graduate school matters and can assist students in reviewing the options available to them. Two publications are very helpful to students searching for appropriate graduate programs: *Graduate School Admissions Manual*, a four-volume set published by the Educational Testing Service, which identifies all graduate schools in the U.S. offering programs in each specific field of study, and *Petersen's Guides*, which are helpful in deciding which school is most suitable. The *Manual* is available in the college office. Both the *Manual* and *Petersen's Guides* are available in the Graduate Division office.

PROFESSIONAL PROGRAMS

Most graduate professional programs do not require completion of a specific undergraduate major. Instead, students may complete the major of their choice while completing any specific course prerequisites required for admission to the programs of interest to them, as summarized below.

Health fields. Students who are preparing for careers in medicine, dentistry, nursing, pharmacy, physical therapy, medical technology, veterinary medicine, and other health sciences find that UCSB is an excellent place to complete their undergraduate preparation. The pre-health sciences adviser in the Department of Biological Sciences and the college pre-professional adviser assist them in planning their programs appropriately and in

preparing for the rigorous medical and dental school application process. The UCSB Center for Academic Skills Enrichment (CASE) provides free preparation sessions for the standardized examinations required for admission to medical and dental schools. UCSB graduates are accepted into U.S. medical schools at a rate 30-50 percent higher than the national average.

Though many students select majors within the biological sciences, medical schools, dental schools, and schools in the other health sciences do not require or expect applicants to complete a specific major. Many schools, in fact, encourage applicants to gain broader preparation by choosing majors from among the social sciences and humanities. Each school, however, does require certain prerequisite courses, which invariably include Chemistry 1A-B-C and laboratories (General Chemistry); Chemistry 6A-B and either 130A-B-C or 8A-B-C (Organic Chemistry and laboratories); Biology 11A-B-C (Introductory Biology); Physics 6A-AL-B-BL-C-CL, or 1-2-3-3L-4-4L (General Physics with laboratories); Mathematics 3A-B-C, or Mathematics 34A-B (Calculus); and Probability and Statistics 33 (Calculus); and English 2A-B (First-Year Reading and Composition). The following courses are often recommended: Biology 108A-B-C (General Biochemistry); Biology 130A-B (General Genetics); and Zoology 100 (Developmental Biology). Some schools of dentistry require a course in psychology.

The overall grade-point average, particularly the grades earned in the prerequisites described earlier, will be a primary factor in determining the student's prospects for admission. Generally, at least a 3.3 grade-point average in the sciences and in all college work will be needed. Scores on the standardized examinations will also be an important factor. Because competition is intense, interested students are encouraged to consult the pre-health sciences adviser early in their academic careers, in order to plan their programs carefully. The *Letters and Science Announcement* presents information and advice for students interested in veterinary medicine, medical technology, nursing, physical therapy, medicine, and dentistry.

Counseling and human services. Students planning careers in one of the helping professions such as

counseling psychology, marriage and family counseling, educational psychology, social work, and industrial psychology may complete their undergraduate education at UCSB. No specific undergraduate major is required for most programs, but substantial course work in the behavioral and social sciences is strongly recommended, and a course in statistics is often required. Some programs require applicants to take the Graduate Record Examination. Graduate professional programs in the counseling and human services area normally require one to two years of study.

Previous experience (volunteer or paid) in a human services setting is a requirement for most professional degree programs. Applicants to such programs are often asked to provide letters of recommendation from their supervisors. Additional information can be obtained from the Departments of Sociology and Psychology, from the Graduate School of Education, and from the pre-professional adviser in the College of Letters and Science.

Law. Students preparing for law school can select virtually any major of interest to them. Law schools seek applicants with a broad academic background who have demonstrated superior analytic and communication skills. Academic performance and scores achieved on the Law School Admissions Test (LSAT) are important criteria in the selection process. The college pre-professional adviser assists students in reviewing prospective law schools and the law school admissions process, and offers suggestions related to major selection and program planning. The UCSB Association of Pre-Law Students provides information and mutual support; it organizes law school tours for its members and hosts the visits of law school representatives. For further information, students are encouraged to review the *Pre-Law Handbook*, available in most university and commercial bookstores.

Management. Students from a variety of academic backgrounds are admitted to graduate schools of business administration and management. Areas of emphasis within the general field of management include international business, personnel management, hospital administration, arts management, banking and finance,

marketing, operations research, accounting, labor and industrial relations, transportation and public utilities, and insurance.

Many schools have specific course prerequisites. These often include courses in accounting, micro- and macro-economics, statistics, and mathematics. Students are advised to review the admission requirements of the programs of interest to them so that they can plan their undergraduate programs accordingly.

Most graduate schools of business require applicants to submit scores earned on the Graduate Management Admissions Test (GMAT). The UCSB Center for Academic Skills Enrichment (CASE) offers preparation sessions for this examination. In addition, graduate schools of business generally seek applicants who have supplemented their academic pursuits with activities that have enabled them to develop and exercise their leadership potential and organizational skills. Many such activities are available at UCSB, including participation in student organizations and government and in one of the various internship programs sponsored by an academic department or by the UCSB Applied Learning Program. Full-time work experience is becoming increasingly important for admission to many schools of business; some of the most prestigious programs have initiated a process of deferred admission to ensure that students have the necessary work experience before they undertake graduate study. Interested students are invited to consult the college pre-professional adviser and the advisers in the Department of Economics. *The Official Guide to MBA Programs, Admissions, and Careers*, available in many university and commercial bookstores, contains descriptions of more than 400 M.B.A. programs.

Teaching and related fields. The two first-level teaching credentials available in California are the Multiple Subject (elementary) and the Single Subject (secondary) credentials. Both require the prior completion of a bachelor's degree plus one academic year of graduate professional teacher education course work and student teaching. The Graduate School of Education at UCSB offers these and several additional credential and graduate education programs.



I study the anthropology of ancient people using the techniques of archaeology. The goal of archaeologists is to learn as much about ancient people who have little or no written history as our sociocultural colleagues are able to learn about the modern people they study. This is not so simple, however, since the archaeological record is nothing more than prehistoric garbage. This is the reality of what is sometimes called "the romance of archaeology."

The people whose lifeways I have been trying to identify and understand recently are the Mixe-Zoque, western neighbors of the ancient Maya. While sharing many general traits with their better-known neighbors, the Mixe-Zoque had a culture that was distinct from that of the Maya in many specific ways.

I have been working in the Chiapas region of Mexico for approximately 15 years. My first project investigated the earliest known people of the region, who lived between 3000 and 2000 B.C. My latest research is at the other end of the scale of prehistory: the time just prior to the arrival of the Spaniards in the early sixteenth century. At that time the Mixe-Zoque of the coast already had been conquered and incorporated into the Aztec Empire. I have been trying to evaluate exactly what impact this conquest had on the social life of the late prehistoric Mixe-Zoque.

My primary objective as a teacher is to share with my students the excitement and satisfaction that comes from scholarly research. This is never easy. Yet, if I am even partially successful in helping students whet their curiosities and hone their critical faculties, both they and I are richly rewarded.

Barbara Voorhies
Professor and Chair
Department of Anthropology

Dr. Voorhies's research in Mexico has been funded by both the National Science Foundation and the National Geographic Society. She has written for the *World Book Encyclopedia* as well as for anthropology books and journals. Her other research interests include cultural ecology and the anthropology of women.

Certain specific prerequisite courses are required for admission to these credential programs. A full description of prerequisites, and of the programs and options offered at UCSB, is contained in the *Letters and Science Announcement* and the *Graduate School of Education Announcement*. Pre-credential students are encouraged to discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Special education. In order to qualify for a specialist credential in California, applicants must have valid basic teaching credentials and must complete a specialized graduate program or professional preparation. Five areas of advanced specialization are available at other schools and colleges in California: communication handicapped; learning handicapped; physically handicapped; severely handicapped; and gifted. These programs require one year of graduate study and normally require specific undergraduate preparation. UCSB offers an accredited Special Education Specialist-Learning Handicapped Credential Program. Details are available from the Graduate School of Education, Phelps Hall.

Anthropology

Department of Anthropology, North Hall 2051;
Telephone (805) 961-2257. Department Chair:
Barbara Voorhies.

Faculty

- David W. Brokensha, D. Phil., Oxford University,
Professor (*modernization, ecology, plural societies, Africa*)
- Donald E. Brown, Ph.D., Cornell University,
Professor, (*sociocultural anthropology, political anthropology, anthropology of history, Southeast Asia*)
- Manuel L. Carlos, Ph.D., UC Santa Barbara,
Professor (*political anthropology, Latin America*)
- Napoleon Chagnon, Ph.D., University of Michigan, Professor (*social behavior, evolutionary theory, social structure, South American Indians*)
- Charles J. Erasmus, Ph.D., UC Berkeley,
Professor Emeritus
- Brian M. Fagan, Ph.D., Cambridge University,
Professor (*Old World archaeology, general prehistory, multi-media teaching*)
- Michael A. Glassow, Ph.D., UC Los Angeles,
Professor (*archaeology, cultural ecology, western North America*)
- Thomas G. Harding, Ph.D., University of Michigan, Professor (*economic anthropology, the Pacific*)
- Elvin Hatch, Ph.D., UC Los Angeles, Professor (*history of anthropology, social history of rural America and New Zealand*)

- Michael Jochim, Ph.D., University of Michigan, Associate Professor (*archaeology, hunters and gatherers, European prehistory, archaeological method and theory*)
- William Madsen, Ph.D., UC Berkeley, Professor (*primitive religion, psychological anthropology, Mexico, addiction*)
- Mattison Mines, Ph.D., Cornell University, Professor (*social anthropology, South Asia, South Asian Muslims*)
- Juan Vicente Palerm, Ph.D., Universidad Iberoamericana, Associate Professor (*peasant studies, development*)
- Katharina Schreiber, Ph.D., State University of New York, Binghamton, Assistant Professor (*archaeology of Andean South America and the southwestern United States, origin and development of complex societies, empire expansion*)
- Elman R. Service, Ph.D., Columbia University, Professor Emeritus (*ethnology and anthropological theory, Latin America*)
- Albert C. Spaulding, Ph.D., Columbia University, Professor Emeritus (*archaeology, eastern United States and California, statistical methods in archaeology, application of the philosophy of science to archaeological research*)
- Donald Symons, Ph.D., UC Berkeley, Professor (*physical anthropology, primate social behavior, the evolution of human behavior*)
- Barbara Voorhies, Ph.D., Yale University, Professor (*archaeology, cultural ecology, Mesoamerica*)
- Phillip L. Walker, Ph.D., University of Chicago, Associate Professor (*physical anthropology, osteology, primatology, human evolution*)
- Mayfair Yang, Ph.D., UC Berkeley, Assistant Professor (*sociocultural anthropology, social organization, economic development, China*)

Affiliated Faculty

- Charles Li, Ph.D., UC Berkeley, Professor (*linguistic universals, language typologies*)

Anthropology is the study of humans in the broadest sense: biological, sociocultural, and historical. Most undergraduates in anthropology at UCSB select this major because of the opportunity it affords them to acquire a sound liberal education, even if they do not intend to become anthropologists. However, the professionally oriented student will also find the curriculum fully suitable.

The aim of the anthropology major is threefold: (1) to prepare for graduate school those students who wish to work professionally in anthropology; (2) to prepare students for careers in secondary education or in social work; and (3) to provide a background in behavioral studies for students who desire a broad education in either the biological or the social sciences.

The Department of Anthropology's undergraduate secretary is available for advising on matters such as courses, requirements, substitutions, and petitions. The department also has advisers in cultural and social anthropology, physical anthropology, archaeology, and the Education Abroad Program. Graduate students in need of advising should contact the graduate secretary. Brochures regarding the M.A. and Ph.D. programs in anthropology are published annually.

After completing specific prerequisites, students with a bachelor's degree in anthropology are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Cultural Anthropology

Preparation for the major. Anthropology 2, 3, 5.

Upper-division major. Forty units of upper-division anthropology courses, eight of which may be in related courses in other departments. Consult the department regarding acceptable courses in other disciplines and for limitations on double majors. Students are required to take a minimum of seven upper-division courses (28 units) distributed as indicated among the five groups listed below. Students will need to select an additional 12 units of anthropology of which up to 8 units may be in related fields.

I. Theory and Method (one required from A or B)

A. Ethnology

- 106. History of Anthropological Theory
- 113. Anthropological Linguistics
- 123. The Anthropology of History
- 128. Contemporary Anthropological Theory
- 129. Culture and the Individual
- 132. Basic Skills in Sociocultural Anthropology
- 147. Understanding Cultural Differences
- 154. Special Topics in Social Anthropology
- 179. Seminar on the Anthropology of Symbolism

B. Archaeology

- * 100. Basic Archaeological Concepts
- 163N. Analysis of Archaeological Materials
- 174. Spatial Analysis in Archaeology
- 180A-B. Faunal Analysis
- * 181. Methods and Techniques of Field Archaeology
- * 182. Methods of Archaeological Analysis
- * 183. Field Training in Archaeology
- * 191. Laboratory Techniques in Archaeology
- 194. Field Training in Mesoamerican Archaeology
- 194P. Practicum in Field and Laboratory Analysis
- * These courses are strongly recommended for majors with an archaeology emphasis.

II. Topics in Ethnology and Archaeology (two required from A and/or B)

A. Ethnology

- 107. Psychological Anthropology
- 108. Traditional Political Systems
- 109. Human Universals
- 114. Social Organization
- 115. Law and Warfare in Nonwestern Societies
- 116. Magic, Religion, and Witchcraft
- 117. Knowledge and Perception
- 118. Ethnology of Inequality
- 120. Production and Reproduction
- 125. The Female of the Species
- 127. Hunters and Gatherers
- 138A. Traditional Chinese Society
- 138B. Contemporary Chinese Society
- 157. Cross-Cultural Aspects of Human Development
- 158. Comparative Family Organization
- 159. Urban Anthropology
- 166. Anthropological Approaches to Addiction
- 171. Economic Life of Primitive and Peasant Societies
- 176. Seminar in Contemporary Ethnology
- 192. Corporations and Society

B. Archaeology

- 133. Cultural Development in Mesoamerica
- 143. Archaeology for the Lay Person
- 185. Great Discoveries in Archaeology
- 187. The Clash of Cultures

- 188. The Seacoast in Prehistory

III. Development, Ecology, and Social Change (one required from A or B)

A. Ethnology

- 110. Technology and Culture
- 111. Culture Change, Explanation, and Control
- 119. Reform and Revolution
- 122. Anthropology of World Systems
- 124A-B. Human Exploitation of Plants and Animals
- 127. Hunters and Gatherers
- 139. Applied Anthropology
- 141. Agriculture and Society in Mexico: Past and Present
- 146. Development Anthropology
- 148A. Minorities in Selected Societies
- 148B. Urbanization in Developing Countries
- 160. Cultural Ecology
- 161. Development of Urbanism
- 164. The Origins of Complex Societies
- 165. The Origins of Civilization
- 170. Origins of Trade
- 172. Colonialism: Social Effects
- 187. The Clash of Cultures
- 190. Seminar on Political Anthropology of Latin America

B. Archaeology

- 162. Prehistoric Food Production
- 164. The Origins of Complex Societies
- 167. People of the Ice Age

IV. Ethnography and Culture History (two required from A and/or B)

A. Ethnology

- 101. Peoples of Europe
- 102. Peoples and Cultures of the World
- 103. Peoples and Cultures of Asia
- 126. Indians of California
- 131. North American Indians
- 134. Modern Cultures of Latin America
- 135. Modern Mexican Culture
- 136. Peoples and Cultures of the Pacific
- 140. Peoples and Cultures of the Middle East
- 142. Peoples and Cultures of India
- 144. Peoples and Cultures of Southeast Asia
- 149. Social Change in Modern Africa

B. Archaeology

- 130. Archaeology of South America
- 137. The Ancient Maya
- 155. Prehistory of California and the Great Basin
- 163. Archaeology of North America
- 175. Southwestern Archaeology
- 186. Interpreting Archaeological Data: Problems in Southwestern Prehistory
- 189. Problems in European Prehistory
- 193. Problems in Mesoamerican Prehistory

V. Physical Anthropology (one required)

- 105. Human Variation
- 121. Human Evolution
- 151. Fossil Evidence for Human Evolution
- 152A-B. Osteology
- 153. Seminar on Primate and Human Sexual Behavior

Bachelor of Arts — Physical Anthropology

Preparation for the major. Anthropology 2, 3, 5, 105; Zoology 25 and 25L. Recommended: Zoology 40, 40L, and Biology 11A-B-C.

Upper-division major. Forty units of upper-division anthropology, excluding Anthropology 105, at least 12 of which are in physical anthropology courses (Anthropology 121, 151, 152, 153, 180A-B). Twelve units of related upper-division courses in biological sciences and linguistics are permitted for credit in the physical anthropology major. See department regarding acceptable

courses in biology and linguistics and for limitations on double majors.

Senior Honors Program

The senior honors program is designed to facilitate independent research on topics chosen by the student and pursued in particular depth. Qualified majors will be invited to participate in the honors program. Minimum qualifications are junior standing (completion of at least 105 units), completion of at least 20 upper-division units in anthropology, a grade-point average of at least 3.4, and two signatures of recommendation from instructors with whom the student has worked.

Students may enter the program any quarter. Each candidate for honors enrolls in Anthropology 195A-B, taken in consecutive quarters, under the instruction of a thesis adviser chosen by the student. In Anthropology 195A, the student will concentrate on reading and gathering material for the thesis; in 195B, the student will write the thesis. The senior honors thesis will be retained permanently in the department office for faculty and students to read.

Anthropology students who complete the honors program, who maintain grades of B or better in Anthropology 195A-B, and who graduate with a minimum 3.4 grade-point average in the major will be awarded Distinction in the Major on university records and on the diploma.

College of Letters and Science Honors Program

Students enrolled in the College of Letters and Science Honors Program will be eligible to enroll in special 'honors' discussion sections in most lower-division anthropology courses. See the department undergraduate secretary for more information.

GRADUATE PROGRAM

There are two emphases in the M.A. and Ph.D. programs: archaeology and ethnology; additional specializations are possible within each of these fields. A complete statement of degree requirements and policies is available from the department.

Master of Arts — Anthropology

Admission

Applicants for admission to the graduate program in anthropology must fulfill general requirements for admission to graduate status, and must have pursued an undergraduate major in anthropology or its equivalent. Some students are admitted into the graduate program to work only toward the M.A. degree; others are admitted with the understanding that they will continue to the Ph.D. when they have received the M.A. Those who wish to pursue the Ph.D. must indicate their intent when first applying. Applicants will be admitted in fall quarter only; the deadline for applications is April 1.

Degree Requirements — Ethnology Emphasis

For the first year, ethnology students devote themselves chiefly to graduate seminars, although some undergraduate courses may be taken to make up deficiencies in specific areas. By early winter quarter, each student selects an advisory committee of three faculty who will assist the student in drawing up his or her M.A. contract. The contract is specially tailored to each student's needs and includes courses and language training. It should be drawn up during winter quarter, but in no case later than the end of spring quarter. Near the end of the first year, the

student takes a comprehensive exam, covering both the general field of cultural and social anthropology and the student's topics of specialization.

In the second year students continue taking graduate seminars. Toward the end of the year they write a research paper reviewing and analyzing the literature dealing with their main topics of specialization.

Degree Requirements — Archaeology Emphasis

The department offers an M.A. program in North American archaeology that is intended to train people who plan to work in cultural resource management in the United States. This program is open to holders of the bachelor's degree. Details of the program are available from the department.

During the first year of study, there are five required core courses; three other courses are required but may be taken any time within the first seven quarters. In addition either a field course or equivalent field experience is required. The normal course load is three courses per quarter. The student should also begin compiling a portfolio which demonstrates expertise in various laboratory and field techniques.

Each incoming student is assigned an adviser to supervise his or her progress until the M.A. committee is formed. The student and his or her committee agree upon a research topic. The thesis should represent a piece of original research in North American archaeology. It must be completed and accepted no later than the end of the third year after matriculation.

In the spring quarter of the second year, students take a qualifying examination on general anthropology and method and theory in archaeology. After satisfactory completion of coursework, portfolio, thesis, and exam, the M.A. degree is conferred.

Doctor of Philosophy — Anthropology

Admission

After obtaining the M.A. degree, the student may be invited to continue toward the Ph.D. degree. At this time each student invites three faculty members to serve on the Ph.D. committee. Committee members consult with the student in designing a research proposal. Acceptance of the proposal by the committee advances the student to candidacy.

Degree Requirements — Ethnology Emphasis

Doctoral students begin by writing a research proposal for the Ph.D. dissertation. The proposal is normally submitted to a funding agency such as the National Science Foundation. Usually about a year will elapse between the M.A. and the receipt of funds if the research grant is awarded; most of this time is spent in independent study.

Field work of at least three quarters' duration is required before the Ph.D. can be granted. The dissertation is normally based on field research, but this is not a requirement. Students must demonstrate the methodological and other skills required by the research specialty, such as knowledge of a foreign language, linguistics, statistics, historiography, laboratory techniques, and the like.

Degree Requirements — Archaeology Emphasis

The department offers a Ph.D. program in North American, Mesoamerican, South American, and



Anthropology students use a string grid to record the locations of objects found in excavating this prehistoric house floor on Mescalitan Island in Goleta.

European archaeology. This program is open to holders of the bachelor's and master's degree. Those entering with the M.A. may have some of the following requirements waived. Details of the program are available from the department.

During the first year of study there are five required courses; three others are required but may be taken any time within the first seven quarters. The normal course load is three courses per quarter. Elective courses, as well as other aspects of the course of study, are supervised by the student's assigned adviser. The student should also begin compiling a portfolio which demonstrates expertise in various laboratory and field techniques.

During the second year, the student takes a full course load and begins working on a research paper. In the spring he or she will take a qualifying examination in two areas: general anthropology and method and theory in archaeology. The student then forms a Ph.D. committee and formulates a contract.

In fall quarter of the third year the research paper is due. After satisfactory completion of coursework, portfolio, research paper and exam, the M.A. may be awarded. The candidate then submits a dissertation proposal. Ph.D. candidates must spend at least three quarters in dissertation research. Submission and approval of the dissertation qualifies the student for the Ph.D. degree.

ANTHROPOLOGY COURSES

LOWER DIVISION

Freshman seminars are offered on an irregular basis.

2. Introductory Cultural Anthropology

(4) Staff

The nature of culture: survey of the range of cultural phenomena, including material culture, social organization, religion, and other topics.

3. Introductory Archaeology

(4) Schreiber

Partly self-paced learning.

An introduction to archaeology and the prehistory of humankind from the earliest times up to the advent of literate civilization and cities; also processes of cultural change.

4. Human Diversity

(4) Fagan

Prerequisite: limited to freshmen and sophomores only.

An exploration of the biological and cultural nature of human diversity, with special reference to its historical roots. The course draws on anthropological case studies to discuss human diversity in the contemporary world.

5. Introductory Physical Anthropology

(4) Symons

Human evolution: evolutionary theory, basic genetic concepts, primate evolution and behavior, fossil man, evolution of human behavior and mind.

10. Faces of Culture: A Film Introduction to Cultural Anthropology

(4) Chagnon

Twenty-six films which have been developed to introduce the student to the diversity of human ways of life will be shown and discussed in this class. The heavy emphasis on visual material is designed to make cross-cultural studies more readily accessible to the California student.

UPPER DIVISION

100. Basic Archaeological Concepts

(4) Jochim

Prerequisite: Anthropology 3.

A survey of important archaeological methods of excavation, analysis, and interpretation. Focus will be on the problems and promise of various approaches to the explanation of past human behavior.

101. Peoples of Europe

(4) Robertson

Prerequisite: upper-division standing.

The cultural diversity of contemporary European societies: its historical antecedents, its significance in social and economic change, and its importance in national and international politics.

102. Peoples and Cultures of the World

(4) Harding

A survey of representative primitive and archaic cultures of the world in evolutionary perspective.

103. Peoples and Cultures of Asia

(4) Staff

Introductory survey of the past and present social organization and cultures of South, Central, Southeast, and East Asia. (Normally taught every other year.)

105. Human Variation

(4) Walker

Prerequisite: Anthropology 5, Biology 20, or equivalent.

An examination of traditional race concepts contrasted with an approach to human variation through the analysis of biologically adaptive traits.

106. History of Anthropological Theory

(4) Hatch

Prerequisite: Anthropology 2

An account of the intellectual traditions of anthropology, the main figures who shaped these traditions, and the issues that both divided and united anthropologists at different periods of time.

107. Psychological Anthropology

(4) Staff

Human socialization, sexual behavior, aggression, mental illness, national character, and social pathology in cross-cultural perspective.

108. Political Anthropology

(4) Brown

Prerequisite: Anthropology 2 or upper-division standing.

Historical survey of anthropological and earlier contributions to the cross-cultural study of government.

109. Human Universals

(4) Brown

A critical overview of those characteristics of human psyche, behavior, society, and culture that are allegedly found among all peoples: the constants of human nature.

110. Technology and Culture

(4) Harding

The role of tools and technical knowledge in the evolution of societies. The development and spread of major technological innovations from the Paleolithic to the Industrial Revolution. The impact of industrial technology on primitive and archaic cultures.

113. Anthropological Linguistics

(4) Li

Prerequisite: Linguistics 20 or upper-division standing. Same course as Linguistics 116.

This course introduces the structure of language, language universals, language typologies, language change, linguistic theories, and methodologies of linguistic research. It is designed for students of anthropology.

114. Social Organization

(4) Mines

Emphasis on various theories of social structure and social organization in cross-cultural perspective; kinship, social stratification, and ethnicity.

115. Law and Warfare in Nonwestern Societies

(4) Staff

The nature of law and warfare in nonwestern societies. Analysis of the strategy and tactics of conflict resolution in relation to ecological, economic, and political aspects of life in nonwestern societies.

116. Magic, Religion, and Witchcraft

(4) Madsen

Cultural parallels and variation in supernatural beliefs and practices. The origin and development of supernaturalism from primeval man through contemporary societies. The techniques of supernatural control and the relativity of "reality." Today's search for sanction and meaning.

117. Knowledge and Culture

(4) Brokensha

Prerequisite: Anthropology 2 or equivalent.

Recommended: introductory philosophy, introductory linguistics, upper-division course in English or foreign language literature, upper-division course in intellectual history.

Theories of "primitive mentality" in classical and modern anthropology; primitive esoteric knowledge and cosmology; folk taxonomies and knowledge of nature; numeration in primitive and archaic cultures; transmission and accumulation of knowledge in the premodern era.

118. Ethnology of Inequality

(4) Staff

Inequality in primitive, peasant, and developing societies and the rise of egalitarianism.

119. Reform and Revolution

(4) Robertson

Prerequisite: Anthropology 2.

An anthropological approach to the study of social movements: their causes, organization, and consequences; their subjective ideas and intentions; and their relationships to the broader structures of state and society.

120. Production and Reproduction

(4) Robertson

Prerequisite: Anthropology 2.

Exploration of the relationship between family processes and changing economic structure in tribal, peasant, and industrial societies. How the production of people depends on the reproduction of economic relationships, and how economic production is influenced by human reproduction.

121. Human Evolution

(4) Walker

Prerequisite: Anthropology 5.

The nature and results of the evolutionary processes responsible for the formation and differentiation of human populations.

122. Anthropology of World Systems

(4) Carlos

Focuses on the penetration and impact of global capitalist economy (national and multinational) upon local level third world societies, communities, and groups. A world system perspective is taken and anthropological case studies are presented from Asia, Africa, and Latin America.

123. The Anthropology of History

(4) Brown

Introduction to ethnohistory (anthropologists' attempts to discover a people's past) and folk history (a people's own view of their past), with special emphasis on cross-cultural comparison of the conditions which determine the content and form of folk history.

124A-B. Human Exploitation of Animals

(4-4) Brokensha, Walker

Upper-division standing or Anthropology 2, 3, or 5 is prerequisite to 124A. Anthropology 124A is prerequisite to 124B.

Emphasis of this course will be placed on the cultural factors influencing humans and animals with special emphasis on the way cultural factors influence human exploitation of animals.

A. A general introduction and overview.

B. A seminar for more specialized study of main themes.

125. The Female of the Species

(4) Staff

Prerequisite: Anthropology 2.

A cross section of women's social roles from a pan-human perspective. Investigations into the reasons behind the rich diversity of these roles.

126. Indians of California

(4) Staff

There were many Indian societies in California at the time of European contact. Many of these societies had complex economic, religious, and political systems. Some of these societies will be examined in greater detail, such as the Chumash.

127. Hunters and Gatherers

(4) Jochim

Prerequisite: Anthropology 2 or 3.

What do Pygmies, Aborigines, and Eskimos have in common? What is the relationship between nature and culture in these simple societies? These questions and other will be examined through case studies and cross-cultural comparisons.

128. Contemporary Anthropological Theory

(4) Staff

Prerequisite: Anthropology 2.

This course focuses upon recent anthropological theory, that is, theory which has been proposed since the 1950s. The course will appeal to students who plan a career in anthropology.

129. Culture and the Individual

(4) Hatch

This course discusses the leading views among anthropologists about the nature of the individual, the role of culture in shaping the human personality, and the role that the individual plays in culture or society.

130. Archaeology of South America

(4) Schreiber

Prerequisites: Anthropology 3 and 100.

A survey of the Andean region, tracing the rise of civilization from early hunter-gatherers to the impressive Inca Empire. Emphasis is placed on the archaeological basis for interpretations of such major cultures as Chavin, Nasca, Moche, Wari, and Tiwanaku.

131. North American Indians

(4) Glassow

The origins, development, and attainments of New World aboriginal cultures north of Mexico. Some emphasis is given to California groups such as the Chumash.

132. Basic Skills in Sociocultural Anthropology

(4) Staff

A practical introduction to method, covering such topics as research design, participant observation, status/role analysis, networks, interviewing, ethnohistory/oral history, ethnosemantics, controlled comparison, survey methods, test of significance, data analysis, and data presentation.

133. Cultural Development in Mesoamerica

(4) Voorhies

Prerequisites: Anthropology 3 and 100.

The rise and fall of various ancient civilizations such as those of the Maya, Aztecs, Toltecs, Teotihuacanos, and Olmec as well as their cultural antecedents. This course uses self-paced audio-visual modules as well as traditional lecture format. (Offered periodically.)

134. Modern Cultures of Latin America

(4) Carlos

Continuities and changes in the contemporary cultures of peasant and urban societies in Mexico, Central, and South America. Examination of cultural institutions and values, social stratification, village and urban life, elites, urbanization.

135. Modern Mexican Culture

(4) Carlos

The impact of dependency, industrialization, urbanization, technology, and modern communications on Mexican society in the Twentieth century. Examination of recent sociocultural contemporary urban and rural communities, class structure, value orientations, ethnic minorities, and national integration.

136. Peoples and Cultures of the Pacific

(4) Harding

The aboriginal and modern cultures of Polynesia, Melanesia, and Micronesia.

137. The Ancient Maya

(4) Voorhies

The splendiferous Maya civilization as it waxed and waned during ancient times. This course uses self-paced audio-visual modules as well as the traditional lecture format.

138A. Traditional Chinese Society

(4) Staff

An account of the societal, political, economic, and religious forms of late traditional China; these forms are viewed in light of contemporary social science theory, and attention is given to the process of modernization.

138B. Contemporary Chinese Society

(4) Staff

Anthropology 138A is not a prerequisite.

An analysis of social patterns in the People's Republic of China, emphasizing the contrast between traditional forms and the changes instituted by the Chinese Communist Party.

139. Applied Anthropology

(4) Carlos

Examines the development, changing goals, and techniques of applied anthropology in the U.S. and Third World. Emphasis given to the role of anthropology in designing and implementing social change and development programs, services delivery programs, and program evaluation procedures.

140. Peoples and Cultures of the Middle East

(4) Staff

Study of contemporary Turkey, Iran, Syria, Lebanon, Iraq, Jordan, Saudi Arabia, and Egypt. Emphasis will be on local problems in development. Major source material and topics will center on, but will not be strictly confined to, the anthropological literature.

141. Agriculture and Society in Mexico: Past and Present

(4) Palerm

The evolution of rural Mexico: from origins of Mesoamerican agriculture to the rise of high civilization; from the establishment of the colonial system to the demise of colonial agricultural institutions; from the revolution of 1910 to the enactment of land reform and development programs. Emphasis will be made on the role of peasantry in the making of the modern state.

142. Peoples and Cultures of India

(4) Mines

Rise of Indian civilization from prehistoric times to the present; regional divisions of India; family, kin, caste groups, and village life; social organization above village level; effects of urbanization, British rule, and independence.

143. Archaeology for the Lay Person

(4) Fagan

Major emphasis on self-paced learning.

A course for nonmajors that explores the role of archaeology in the contemporary world. Material

covered includes the discovery of the great civilizations, the intellectual significance of archaeology, and the ethics of collecting and archaeological research.

144. Peoples and Cultures of Southeast Asia

(4) Brown

Drawing materials from Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia, and the Philippines, this course is organized around the concept of the corporation as a tool for the comparative analysis of society. (Normally taught every other year.)

146. Development Anthropology

(4) Staff

Prerequisite: upper-division standing.

An introduction to the planning of economic development in the "Third World" and its social consequences from the perspective of anthropology.

147. Understanding Cultural Differences

(4) Hatch

The differences among human societies are enormous, and the question of how to account for this diversity is a key problem for anthropology. This course presents the main points of view for explaining how peoples differ in cultural beliefs and behavior.

148A. Minorities in Selected Societies

(4) Brokensha and Carlos

An examination of the social, economic, linguistic, legal, political, and personal position of minorities in selected countries, including South Africa, East Africa, West Africa, Brazil, India, Japan, USSR, and Britain. Emphasis on rights, culture, government actions.

148B. Urbanization in Developing Countries

(4) Staff

Growth of cities, patterns of migration, social effects of urbanization on rural and urban areas; comparative aspects.

149. Social Change in Modern Africa

(4) Brokensha

The social, economic, political, and religious institutions in selected societies from English-speaking tropical Africa.

151. Fossil Evidence for Human Evolution

(4) Walker

Prerequisites: Anthropology 5, 121 recommended.

Presentation and discussion of the fossil evidence for human evolution. Various interpretations will be discussed in light of the evolutionary theory and intellectual climate prevalent at the time of formulation.

152A-B. Osteology

(4-4) Walker

Prerequisites: Anthropology 3, 5, and consent of instructor. Course designed for students who intend to do graduate work in physical anthropology or archaeology.

The biology of bones and teeth: application to study of osteological remains from archaeological sites; morphology, paleopathology, statistical methods. Students are given practical experience in analysis.

153. Seminar on Primate and Human Sexual Behavior

(4) Brown and Symons

Prerequisite: consent of instructor.

A critical examination of the nature and determinants of human sexuality, emphasizing evolutionary and cross-cultural approaches.

154. Special Topics in Social Anthropology

(4) Brown

Designed for students who intend to do graduate work in social or behavioral sciences. May be repeated once for credit. Seminar.

A critical review of selected theoretical and methodological contributions of social anthropology to the description, analysis, and comparison of human societies. (Normally taught every other year.)

155. Prehistory of California and the Great Basin

(4) Glassow

Prerequisite: upper-division standing.

A survey of the prehistory of California and the Great Basin, which includes principally the states of Nevada and Utah. Consideration is also given to how archaeologists construct regional cultural developments and attempt to explain prehistoric cultural change.

157. Cross-Cultural Aspects of Human Development

(4) Staff

Human growth experience, from conception to death, as influenced by several varieties of cultural context.

158. Comparative Family Organization

(4) Staff

Structural principles of family types and non-familial kinship groups, with emphasis on cultural variety and the pressures on such groups brought by social context.

159. Urban Anthropology

(4) Staff

Cultural and psychic adaptation to urban agglomeration from the earliest cities, with emphasis on Asian, African, European, and modern American cities, to the present-day megalopolis.

160. Cultural Ecology

(4) Jochim

Prerequisite: Anthropology 2 or 3.

Ranging from moose hunters to rice farmers, cultures seem tremendously diverse, yet cultural forms do show clear patterns. The relationship of these patterns to the natural and social environment will be examined.

161. Development of Urbanism

(4) Staff

Prerequisites: Anthropology 3 and 100.

Comparative course on urbanism from an archaeological perspective. The first part of course will deal with differences between village and urban society and will include theories and definitions of urbanism. Second part of course will deal with specific case studies.

162. Prehistoric Food Production

(4) Staff

Prerequisite: Anthropology 3.

A history of the process of plant and animal domestication in the Americas, the Near East, Asia, and Africa. Course focuses on the specific biological changes in the major domesticates as well as associated social changes in human life.

163. Archaeology of North America

(4) Staff

Prerequisite: Anthropology 2 or 3 or 5.

A survey of North American archaeology exclusive of Mesoamerica. Changes in prehistoric lifeways from simple hunting and gathering to complex agriculturally based chiefdoms will be explored through the study of the development of regional traditions over long periods of time.

163N. Analysis of Archaeological Materials

(4) Staff

Prerequisites: Anthropology 100 and 191.

An advanced applied course on the analysis and interpretation of prehistoric artifacts from archaeological sites in California. Research design, data recording, simple statistical analysis, and interpretation will be covered as the site analysis progresses through the quarter

164. The Origins of Complex Societies

(4) Staff

Prerequisite: Anthropology 3.

Why and how complex societies developed from simple, egalitarian societies in some areas of the world. Course surveys major theories and evidence surrounding the origins of states and urban societies in New and Old World.

165. Origins of Civilization

(4) Service

Prerequisite: Anthropology 2 or 3.

Examines the six primary civilizations: Mesoamerica, Peru, Mesopotamia, Egypt, Indus Valley, China. The "nature" of civilization is analyzed with special attention to the institutionalization of permanent centralized power, origins of law, the bureaucratic specializations in centralized economy, state-church, and hereditary social stratification.

166. Anthropological Approaches to Addiction

(4) Madsen

Biological, psychological, and sociocultural aspects of addictions will be covered. While addictions in general, from drugs through gambling, will be examined, the emphasis will be on alcoholism. Rehabilitation modalities ranging from aversion to self-help groups will be covered.

167. People of the Ice Age

(4) Staff

Prerequisite: Anthropology 3.

Human adaptations and population dispersals during the Ice Age (Pleistocene epoch). Course focuses on the nature of Stone Age cultures and the evidence for early human occupation of the Americas and the Old World between three million and 10,000 years ago.

170. Origins of Trade

(4) Voorhies

Prerequisites: Anthropology 3 and 100.

Economic life of ancient preindustrial peoples is examined. Topics such as the origins of trade, tribute, money, market economics, and political economies will be discussed.

171. Economics of Primitive and Peasant Societies

(4) Harding, Mines

Economic life of pre-market societies and the social consequences of their involvement in a money economy.

172. Colonialism: Social Effects

(4) Brokensha

Prerequisite: consent of instructor.

Study of historical and social processes of colonialism in selected societies: influence on traditional institutions in Africa, Pacific, Asia; legacies in contemporary independent nations.

174. Spatial Analysis in Archaeology

(4) Staff

Prerequisites: Anthropology 100. Upper-division standing.

How distributions of artifacts on living floors and locations of archaeological sites on a landscape are used to infer human behavior and cultural processes. Contributions to the literature are reviewed and various methods are illustrated with applications to archaeological data.

175. Southwestern Archaeology

(4) Staff

Prerequisite: Anthropology 3

Understanding the sequence of cultural developments in the southwest United States. Reconstructing prehistoric economy and society through study of material remains, such as the cliff dwellings of Mesa Verde, Chaco Canyon's great pueblos, and the ball-courts, platform mounds, and irrigation systems of desert Hohokam.

176. Seminar in Contemporary Ethnology

(4) Staff

Enrollment restricted to majors with a 3.5 grade-point average minimum.

Discussion seminar based on intensive, critical reading of important anthropological works. Intended as preparation for graduate work.

179. Seminar on the Anthropology of Symbolism

(4) Mines

Prerequisite: consent of instructor.

A cross-cultural inquiry into the nature and role of symbolism in human society. Discussions on non-verbal communication, myth, ethos, world view, national symbols, political ideology, and the ideology of social structure as symbolic systems.

180A. Faunal Analysis

(4) Walker

Prerequisite: consent of instructor.

Class is designed to teach students in archaeology and physical anthropology the basic skills necessary to identify and analyze the remains of animals recovered from archaeological excavations. Emphasis is placed on laboratory work with actual archaeological collections and testing hypotheses about prehistoric human behavior.

180B. Faunal Analysis

(4) Walker

Prerequisites: Anthropology 180A and consent of instructor.

Continuation of Anthropology 180A with the development of a research project.

181. Methods and Techniques of Field Archaeology

(6) Glassow

Prerequisites: Anthropology 3 and 100.

Introduction to archaeological research designs and field techniques of data collection, including survey, excavation, and site data recording. Course entails two lectures during the week and fieldwork all day Saturday.

182. Methods of Archaeological Analysis

(4) Spaulding

Prerequisites: Anthropology 3 and 100.

The analysis, description, and comparison of archaeological assemblages: a discussion with examples of analytical methods required for attribute recognition, artifact typology, site seriation, and assemblage taxonomy.

183. Field Training in Archaeology

(6) Staff

Prerequisites: Anthropology 2, 3, and 100, plus upper-division standing and consent of instructor.

Introduction to the planning and implementation of full-scale archaeological projects, with a strong emphasis on the formulation of hypotheses and the collection of data relevant to testing them. Instruction in various forms of data collection, including site reconnaissances, mapping, excavation of structural features, use of aerial photographs, and probabilistic sampling designs

185. Great Discoveries in Archaeology

(4) Fagan

Prerequisite: Anthropology 3.

A history of archaeology viewed through landmark publications from the sixteenth to mid-twentieth centuries. Course participants will read, discuss, and analyze classic papers and monographs, and assess significance of major discoveries.

186. Interpreting Archaeological Data: Problems in Southwestern Prehistory

(4) Staff

Prerequisite: Anthropology 3.

Examines how archaeological data are used to learn about the past, using problems from the southwest United States. A review of southwestern prehistory is presented to provide a background for student projects that involve the analysis of data from actual archaeological excavations.

187. The Clash of Cultures

(4) Fagan

Largely self-paced learning.

A historical and anthropological survey of contact between western civilization and nonwestern societies from medieval times up to the early twentieth century. Peoples covered include Khoi, Aztecs, Tahitians, Fuegians, Maori, and Northwest Indians.

188. The Seacoast in Prehistory

(4) Staff

Prerequisite: Anthropology 3.

An examination of maritime adaptations in world prehistory, emphasizing the integration of marine resources into economies of varying degrees of complexity. Course will cover New and Old World culture areas and the Santa Barbara region.

189. Problems in European Prehistory

(4) Jochim

Prerequisites: Anthropology 167 and consent of instructor.

Seminar in selected problems in the archaeology of Europe.

190. Seminar on Political Anthropology of Latin America

(4) Carlos

Examines the role of the state in society, authoritarianism, revolution, and sociocultural basis and historical background of politico-cultural traditions and institutions which characterize Latin American societies and communities.

191. Laboratory Techniques in Archaeology

(6) Glassow

Prerequisites: Anthropology 3.

Introduction to the observation and measurement of artifact attributes and procedures for preparation and analysis of archaeological collections. Technology of prehistoric artifact manufacture and use is also considered.

192. Corporations and Society

(4) Brown

Examines the anthropological concept of corporateness, and the part this concept plays in the cross-cultural study of law, government, values, social structure, and social change. (Normally taught every other year.)

193. Problems in Mesoamerican Prehistory

(4) Voorhies

Prerequisites: Anthropology 133 and consent of instructor.

Seminar in selected problems in archaeology of Mesoamerica.

194. Field Training in Mesoamerican Archaeology

(1-8) Staff

Prerequisites: Anthropology 3, 100, and 133; consent of instructor.

Introduction to design of research projects and techniques of data collection in Mesoamerican archaeology. The number of units taken in one course will depend on the amount of training and experience received.

194P. Practicum in Field and Laboratory Analysis

(1-4) Staff

Prerequisites: Anthropology 100 and consent of instructor. May be repeated to a maximum of six units.

An applied course emphasizing acquisition of practical skills in archaeological field work and laboratory analysis. Projects will vary depending on the type of archaeological research in progress, but may include artifact processing, cataloging, field excavation, and preparation of research results.

195A-B. Senior Honors Program

(4-4) Staff

Prerequisite: admission to senior honors program. This is a two-quarter, in-progress course with letter grade assigned for both quarters upon completion of Anthropology 195B.

Independent research under the supervision of an anthropology faculty member which will result in senior thesis.

A: Will concentrate on reading and gathering of materials for thesis.

B: Writing of thesis will be completed.

197. Special Courses

(4) Staff

Prerequisite: qualified upper-division students or consent of instructor. May be repeated to a maximum of 12 units provided content is different.

Intensive studies or projects focused on special problems related to anthropology which are not covered by other courses.

198. Independent Readings in Anthropology

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in anthropology. Only students with a 3.5 grade-point average in anthropology (or special permission) may enroll. May be repeated to a maximum of 15 units if taken from a different staff member each time. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Intended for students who know their own reading needs. Normally requires regular meetings with the instructor.

199. Independent Studies in Anthropology

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in anthropology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated to a maximum of 10 units in anthropology if taken from a different staff member each time. Only students with a 3.5 grade-point average in Anthropology (or special permission) may enroll. Students must execute a limited research project on their own initiative.

GRADUATE COURSES**200. Summer Field School in Archaeology**

(8) Staff

Prerequisite: consent of instructor.

Introduction to the planning and implementation of full-scale archaeological projects. The opportunity will be given to formulate and carry out research designed and to direct crews in data collection.

201. Archaeological Theory and Concepts

(4) Jochim

Examination of the theoretical framework for the explanation of prehistoric behavior.

204A. Issues in Prehistory — I

(4) Fagan

An intensive survey of world prehistory from the earliest times up to the advent of food production. The course focuses on the history of research, basic theoretical and intellectual issues, and culture history in Old and New Worlds.

204B. Issues in Prehistory — II

(4) Schreiber

An intensive survey of world prehistory from the advent of food production through the rise of complex societies. Course focuses on basic theoretical issues, history of research, and culture history in Old and New Worlds.

205. The Management of Cultural Resource Contracts

(4) Staff

Soliciting and preparing contract proposals, estimating costs, organizing and staffing projects, and preparing reports for various types of archaeological and interdisciplinary cultural resource surveys and mitigation projects.

206. Current Problems in Archaeology

(4) Staff

Course may be repeated for credit.

Critical examination of a selected aspect of contemporary archaeological research and theory. Topics will vary from year to year.

208. Methods and Techniques of Archaeology

(4) Spaulding

The description, analysis, and interpretation of archaeological data.

209. Problems in Mesoamerican Archaeology

(4) Voorhies

A problem-oriented approach to the major issues of Mesoamerican prehistory. Conducted on a seminar basis.

210. Basic Issues in Physical Anthropology

(4) Walker

Prerequisite: consent of instructor.

A review of basic issues in physical anthropology for graduate students in archaeology.

211. Field Mapping

(4) Voorhies

A field course on the production of topographic maps of archaeological sites. Course includes experience using tape and compass, alidade and transits.

212. Advanced Laboratory Techniques in Archaeology

(6) Glassow

Prerequisite: Anthropology 191 or equivalent.

Consideration of techniques for observation and measurement of artifact attributes, procedures

for preparation and analysis of archaeological collections, organization of archaeological laboratories, and technology of prehistoric artifact manufacture and use.

213. Advanced Methods and Techniques of Field Archaeology

(6) Glassow

Prerequisite: Anthropology 181 or equivalent.

Training in the development and execution of field research designs and the management of field activities, including surveys, excavation, and site data recording. Course entails two lectures and a coordinating session during the week and fieldwork all day Saturday.

214. Practicum in Field Archaeology and Laboratory Processing

(1-4) Staff

Prerequisite: graduate standing.

Practical field experience including survey, excavation, artifact processing, laboratory cataloging, and organization of field and laboratory work.

215. Practicum in Archaeological Research and Interpretation

(1-4) Staff

Prerequisite: graduate standing.

For individuals responsible for synthesis of primary data and specialized analysis into a comprehensive report. Includes analysis of different types of archaeological data, organization of data, interpretation of results, and preparation of professional reports.

216. Practicum in Cultural Resource Management

(1-4) Staff

Prerequisite: graduate standing.

Practical aspects of proposal writing, preparation of budgets, and administration of archaeological contracts.

220. Prehistory and Ethnography of Western North America

(4) Glassow

Seminar investigation of selected problems of prehistoric and historic developments in North America west of the Rocky Mountains.

225. Peasants and Industrialization: "Traditional" Rural Societies

(4) Palerm

The interaction between peasant and industrial socioeconomic formations is examined through three intellectual traditions: late nineteenth century Marxian writers, twentieth century development anthropologists, and proponents of the theory of the articulation of modes of production.

226. Comparative Socialist Societies

(4) Yang

A study of Chinese, Eastern European, and Soviet socialist societies in comparative perspective, focusing on political economy, agricultural collectivization and peasant life, urban industrial society and worker life, ideology and education, folk and state rituals, social stratification, gender and ethnicity.

229. Major Issues in the History of Cultural Anthropology

(4) Service

Prerequisite: graduate standing.

A history of cultural anthropology as revealed in the writings on major theoretical problems beginning in the 1850s, the disputes, the solutions, and final appraisal of where we stand today.

230. Language, Culture, and Society

(4) Li

The study of language in its cultural setting and the effect of language on the culture. Topics to be

covered are: language universals, language typologies, structuralism, diachronic linguistics, and fieldwork methodologies.

232. Current Problems in Ethnology.

(4) Staff

Seminar in selected topics in ethnology.

233A-B. Faunal Analysis

(4-4) Walker

Prerequisite: consent of instructor.

Class is designed to teach students in archaeology and physical anthropology the basic skills necessary to identify and analyze the remains of animals recovered from archaeological excavations. Emphasis is placed on laboratory work with actual archaeological collections and testing hypotheses about prehistoric human behavior. Anthropology 233B is a continuation of Anthropology 233A with the development of a research project.

235. Political Anthropology

(4) Carlos

A critical examination of the main themes and theories of political anthropology.

236. Anthropology of World System

(4) Carlos

Examines the process of colonialism and the penetration of global capitalism in local-level societies of Africa, Asia, and Latin America, utilizing an explicit world system framework. Reviews world system and related anthropological theories, and applies them to specific ethnographic cases.

237A. Anthropology of Development

(4) Mines

The role of anthropology in process of development stressing theory and practice. Stresses theories of development and problems of inequality, focusing on Asia and the Pacific.

237B. Anthropology of Development

(4) Brokensha

Prerequisite: consent of instructor.

The role of anthropology in process of development stressing theory and practice. Stresses policies and approaches of agencies of development, focusing on Africa and Latin America.

238. Economic Anthropology

(4) Harding, Mines

A critical examination of the main themes and theories of economic anthropology.

239. Professionalism in the Social Sciences

(4) Carlos, Voorhies

The social structure of anthropology as a profession; the literary forms to be mastered; dealing with funding institutions, publishers, employers, professional organizations; ethical and applied problems of the professional. Assignment is first draft of research proposal.

240. Field Methods in Cultural Anthropology

(4) Carlos

Selecting peoples for study, carrying out field research, writing reports, control and analysis of the self as the medium of investigation.

241. Development Planning

(4) Robertson

An exploration of the history, motives, structures, and processes of economic development planning in its national and international contexts, with particular reference to the practical involvement of anthropologists.

245. Quantitative Applications in Archaeology

(4) Staff

Prerequisite: Anthropology 208.

A working knowledge of quantitative methods that aid recognition of patterns in archaeological data; an understanding of the sorts of archaeological problems that can be attacked quantitatively; and experience in research designs which yield data that can be effectively analyzed.

250AA-ZZ. Method and Theory in Anthropology

(4) Staff

A discussion of general problems in anthropology. Consult with department office for faculty designation.

252. Social Anthropology

(4) Brown

Seminar on selected topics in social anthropology.

266. Anthropological Approaches to Addiction

(4) Madsen

Biological, psychological, and sociocultural aspects of addictions will be covered. While addictions in general, from drugs through gambling, will be examined, the emphasis will be on alcoholism. Rehabilitation modalities ranging from aversion to self-help groups will be covered.

270A. Problems in African Ethnology

(4) Brokensha

Seminar in selected problems in ethnology of Africa.

270C. Problems in Southeast Asian Ethnology

(4) Brown

Seminar in selected problems in ethnology of Southeast Asia.

270D. Problems in South Asian Ethnology

(4) Mines

Seminar in selected problems in ethnology of South Asia.

270F. Problems in Oceanic Ethnology

(4) Harding

Seminar in selected problems in ethnology of Oceania.

270G. Problems in Latin American Ethnology

(4) Staff

Seminar in selected problems in ethnology of Latin America

501. Teaching Assistant Practicum

(4) Staff

Prerequisite: appointment as teaching assistant in anthropology.

The course, designed to meet the needs of the graduate student who serves as a teaching assistant, includes analyses of texts and materials, discussion of teaching techniques, conducting discussion sections, formulation of topics and questions for papers and examinations, and grading papers and examinations under the supervision of the instructor assigned to the course.

596. Directed Reading and Research

(2-6) Staff

Individual tutorial.

597. Individual Study for Master's Comprehensive Examinations

(2-6) Staff

Individual tutorial.

598. Master's Thesis Research and Preparation

(2-6) Staff

No credit allowed toward degree.
Individual tutorial.**599. Dissertation Research and Preparation**

(2-12) staff

No unit credit allowed toward degree.
Individual tutorial.

Art History

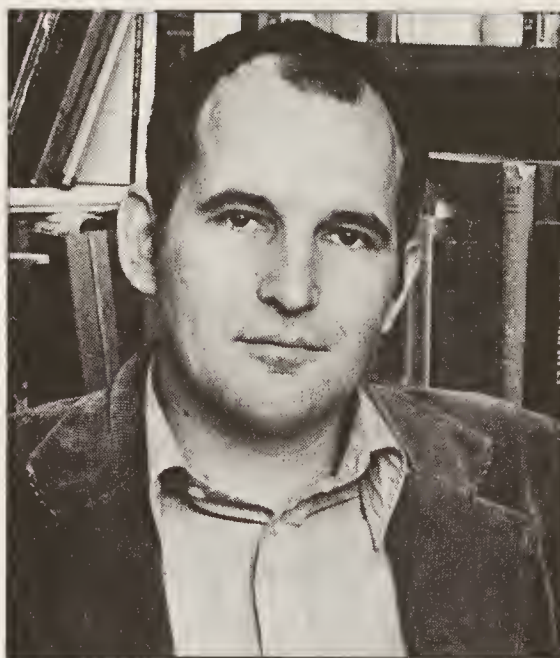
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Larry Ayres.

Faculty

- Larry M. Ayres, Ph.D., Harvard University,
Professor (*medieval art*)
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Professor (*African, Oceanic, North
American Indian art, architecture*)
Mario A. Del Chiaro, Ph.D., UC Berkeley,
Professor (*ancient art; Egyptian, Greek, and
Etruscan art*)
Henri Dorra, Ph.D., Harvard University,
Professor (*19th- and 20th-century European
art*)
Beatrice Farwell, Ph.D., UC Los Angeles,
Professor (*19th-century European art, 20th-
century American art*)
Ramon Favela, Ph.D., University of Texas at
Austin, Assistant Professor (*modern Latin
American art, contemporary Chicano art*)
David S. Gebhard, Ph.D., University of
Minnesota, Professor (*modern architecture,
North American Indian art*)
Ulrich F. Keller, Ph.D., University of Munich,
Professor (*history of photography*)
Peter T. Meller, Ph.D., Budapest University,
Professor (*renaissance art*)
Alfred K. Moir, Ph.D., Harvard University,
Professor (*baroque, Old Master drawings*)
Prudence R. Myer, Ph.D., Radcliffe College,
Professor Emerita
Dorie Reents-Budet, Ph.D., University of Texas
at Austin, Assistant Professor (*Pre-
Columbian art*)
Corlette R. Walker, Ph.D., Bryn Mawr, Senior
Lecturer with Security of Employment (*18th-
century European art, 19th-century
American art, Victorian art*)
Burr E. Wallen, Ph.D., New York University,
Associate Professor (*northern renaissance
art, history of prints*)
Fikret K. Yegul, Ph.D., Harvard University,
Associate Professor (*Greek and Roman art,
architectural history*)

The Department of Art History offers an undergraduate program directed toward a B.A. degree and graduate programs leading to the M.A. and Ph.D. degrees. The undergraduate program in art history is designed to provide thorough and comprehensive basic training in and understanding of art as a humanistic activity. It also prepares students for graduate training leading to careers as professional historians of art, museum curators, or critics, and in such other fields of the visual arts as art administration, historic preservation, and art gallery work. The program is supported by an excellent arts library and slide collection.

After completing specific prerequisites, students with a bachelor's degree in art history are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.



I am a European art historian with a variety of interests, from methodology to Expressionism. After years studying Baroque art, where every stone has been turned, I recently switched to photography as my main subject. In this young discipline, little research has been done. Many of the greatest photographers of all time have never been studied seriously. It's wide-open territory waiting for adventurous people to stake out their claims. I find it highly rewarding to work in this field myself and to supervise dissertations on central topics.

The University Art Museum provides a splendid outlet for research through exhibitions and catalogs. A research institution with generous support for faculty and student projects, UCSB offers the best academic infrastructure I have seen on either side of the Atlantic. Undergraduate teaching is especially enjoyable; I am amazed at the great enthusiasm with which more and more students flock to photography classes. Above all, I am grateful for the presence of so many internationally respected specialists in my department, which insures methodological diversity and constantly stimulating discussion.

Ulrich Keller
Professor
Department of Art History

Dr. Keller's background includes study in Germany, Austria, Italy, and Holland and appointments as assistant director of the Kunsthistorisches Institut in Florence, Italy, and associate curator for research of the International Museum of Photography at the George Eastman House in Rochester, New York. His research has been funded by the National Endowments for the Arts and for the Humanities, and he received a Guggenheim Fellowship in 1986. He is currently working on a photographic history of the Crimean War and a college textbook on the history of photography.

The department publishes a list that describes the content of art history courses offered each quarter; the publication is available for study prior to registration in classes. Advising is available in the department through the undergraduate adviser and the department chair. The department publishes an annual newsletter which reviews the professional accomplishments of current students and graduates; the newsletter is available upon request.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Art History

Preparation for the major. Thirty-two units in lower-division courses including Art History 6A-B-C (12 units); two courses from Art History 6D, 6E, 6F, 6G, 7A or 7E (8 units); and History 4A-B-C. The department recommends that the Art History 6A-B-C series be taken in conjunction with History 4A-B-C. Recommended but not required: French 3, or German 3, or Italian 3, or Spanish 3. Students planning graduate training in art history are advised to develop a reading knowledge of German, French, or Italian. (See honors program requirements below.)

Upper-division major. Forty-four units in upper-division art history courses including Art History 152F or 152I (4 units); Art History 153 series (4 units); Art History 155-156 series (4 units); Art History 157-158 series (4 units); Art History 159* series or 161A (4 units); Art History 160* series or 161B-F-G-H (4 units); Art History 151 series or 161C-D-E, or 180, or 181, or 182 A-B, or 183 A-B (4 units); and 4 additional upper-division art history electives excluding Art History 193 (16 units).

*Either Art History 159G or 160H, but not both, may be taken in fulfillment of the 159 or 160 series requirements.

Honors Program

Students may apply to the department chair, the undergraduate adviser, or individual faculty members for nomination to the departmental honors program. Applicants must have an overall grade-point average of at least 3.0 and must have completed at least 12 upper-division units in the major with a 3.5 grade-point average. These grade-point averages must be sustained in order to qualify for honors.

Program requirements include (1) at least three quarters in either French or German, or in a language relevant to the student's field of concentration, and (2) 48 upper-division or graduate units in art history. Honors candidates must take 8 units in graduate seminars, or upper-division reading courses if a seminar is unavailable, in one field of concentration in which they will write an honors thesis. Deadline for the thesis is the Monday of the eighth week of the second quarter of honors studies. Students successfully completing the honors project will be eligible for Distinction in the Major at the time of graduation.

GRADUATE PROGRAM

Master of Arts—Art History

The Master of Arts is offered in the following major areas or fields of art: Primitive, Ancient, Medieval, Renaissance, Baroque and Rococo, Nineteenth-Twentieth Century, American, Pre-Columbian, Asian, Colonial and Modern Latin American, History of Architecture, and History of Photography.

Admission

Candidates usually present a bachelor's degree in art history, normally with not less than a B+ (3.3) average in the major. They are expected to

know the general history of western art and architecture and to have some knowledge of at least one nonwestern artistic tradition. Applications for fellowships and teaching assistantships must be received in the department by January 31. Applicants must take the Graduate Record Exam.

Degree Requirements

After admission to graduate standing, and before the second year of residence, every student must demonstrate ability to read one foreign language necessary to conduct art historical research (normally French or German). Every student will take a two-hour general examination on the history of art as presented in standard art survey texts. This test must be passed before the student can be advanced to candidacy. The degree requires a minimum of three quarters of intensive work; students are encouraged to complete it within six quarters. Candidates demonstrating exceptional achievement may be awarded departmental honors.

All M.A. students must take at least 16 units in graduate seminars in at least three different fields. Their other work will be drawn from the list of upper-division courses, graduate seminars, and reading and research courses taught by the art history faculty.

Students will follow one of the following plans: Plan 1, which requires a minimum of 30 units of work for a letter grade plus a thesis; or Plan 2, which requires a minimum of 36 units of work for a letter grade plus a comprehensive examination.

Doctor of Philosophy—Art History

The Ph.D. degree program is designed for mature and well-trained scholars who have a sound foundation in art history. The Ph.D. degree in art history is offered in the following major areas or fields of art: Primitive, Ancient, Medieval, Renaissance, Baroque and Rococo, Nineteenth-Twentieth Century, Colonial and Modern Latin American, American Art, History of Architecture, and History of Photography. The department has special fellowship awards at its disposal for campus residency and research travel.

Admission

Candidates for admission to the program must have completed a master's degree in the history of art. A copy of the M.A. thesis or a substantial paper of a scholarly nature should be submitted at the time of application. Application for fellowships and teaching assistantships must be received in the department by January 31. Applicants must take the Graduate Record Exam.

Degree Requirements

Students entering the program will take a four-hour examination in the history of art with emphasis on the area of their intended specialization. Before advancement to candidacy, students demonstrate ability to read German and either French or Italian, and may be required to learn another language (or languages) essential to the field of specialization.

The Ph.D. program requires a minimum of 24 units in graduate courses, planned around a major field and two minors, one related and one unrelated to the major. Written examinations are required in the major and at least one minor; the second minor may be satisfied by taking two seminars in the field. Twenty letter-grade seminar units are required (16 if both minors are satisfied by examination).

At the end of the first year, the student's work will be reviewed by the faculty to see whether it satisfies the standards of the department and the university. Not later than four years after starting the program, the student will submit a preliminary outline of the proposed dissertation. A doctoral

committee will be appointed to supervise the program of research; the committee will also administer the oral qualifying examination. The dissertation will be carried out under the direction of the student's adviser and the doctoral committee; it must be an original contribution to the history of the art. Every student in the Ph.D. program must serve a minimum of two quarters as a teaching assistant.

ART HISTORY COURSES

LOWER DIVISION

Freshman seminars are offered on an irregular basis.

1. Introduction to Art

(4) Staff

Prerequisite: not open to Art History majors. A study of art as a medium of expression.

6A. Art Survey I: Ancient Art

(4) Del Chiaro

From the Stone Age to the end of the Roman Empire.

6B. Art Survey II: Medieval Art

(4) Ayres

From the early Christian period to the Renaissance.

6C. Art Survey III: Renaissance-Modern Art

(4) Moir

From the Renaissance through modern art.

6D. Survey: Asian Art

(4) Myer

The arts of India, China, and Japan.

6E. Survey: Exotic Arts

(4) Cole

A conceptual, cross-cultural introduction to Amerind, Eskimo, African, and Oceanic arts: artists, sculpture, festivals, body decoration, masking, architecture, and painting will be seen in the context of social and religious values. Films, slides, and museum tours.

6F. Survey: Architecture and Planning

(4) Gebhard, Yegul

The architect and planner in history; technical and formal means used; individual buildings and urban plans from the past to the present will be used as examples.

6G. Survey: History of Photography

(4) Keller

A critical survey of nineteenth- and twentieth-century photography as an art form.

7A. Politics in Art Since 1800

(4) Walker

Rise of the avant-garde in art and revolutions.

7E. Pre-Columbian Art

(4) Cole

An introduction to 5000 years of pre-Columbian art in Mexico, Central American, and Peru, to be approached through major monuments of sculpture, architecture, ceramics, textiles, and painting, and against the background of early American religious, social, and political institutions.

UPPER DIVISION

150. Art in the Modern World

(4) Walker

Prerequisites: upper-division standing. For nonmajors only or consent of instructor.

An examination of art of the last 100 years. Treats painting, architecture, and sculpture in a manner that emphasizes the social, economic, and cultural background.

151C. Arts of the South Seas

(4) Cole

Prerequisites: Art History 6E; upper-division standing.

An introduction to masking, sculpture, festivals, body decoration, and architecture of Melanesia, Micronesia, and Polynesia, stressing the relationship of art to life.

151D. History of Native Art and Architecture of North America

(4) Gebhard

Prerequisite: upper-division standing.

A survey of indigenous painting, sculpture, architecture, and other arts of North America as experienced through several major traditions. The principle emphasis will be the presentation of these traditions as they developed and intermingled during the centuries before European contact.

151E. North American Indian Arts in Context

(4) Cole

Prerequisite: upper-division standing.

Survey of American Indian arts by regions: masks, figures, "totem poles," painting, architecture, beadwork, pottery, dress. Emphasis on art-in-context, values, and world views in the arts. Some prehistoric traditions discussed but stress on more recent ethnographical data.

151F. African Art—I

(4) Cole

Prerequisites: Art History 6E; upper-division standing.

The relationship of art to life in sub-Saharan Africa. A cross-cultural survey of types, styles, history, and values of arts ranging from personal decoration to the state festival, stressing Ashanti, Ife, Benin, Yoruba, Cameroon.

151G. African Art—II

(4) Cole

Prerequisites: Art History 6E, 151F, or consent of instructor; upper-division standing.

An in-depth continuation of Art History 151F in a seminar/discussion format. Selected topics in masking, figural sculpture, etc., and emphasis on African contexts of ritual and social life.

151H. The Art of Festivals

(4) Cole

Prerequisites: Art History 6E; upper-division standing.

An examination of African, Oceanic, and American Indian festivals and rituals as works of art; structural and functional analyses of ceremonies recorded on film and videotape. Emphasis on the aesthetic interaction of dance, music, gesture, and the visual arts.

151I. Primitive Architecture

(4) Cole

Prerequisite: upper-division standing.

A selective conceptual and geographical examination of architecture in North America, Africa, Indonesia, and Oceania. Among topics discussed are: mythology, ritual, anthropomorphism, world renewal, social structure, cults, occupation, and world view as manifested in architectural forms and concepts.

152A. Ancient Art: Egypt

(4) Del Chiaro
Recommended preparation: Art History 6A.
The architecture, sculpture, and painting of ancient Egypt from prehistoric through Roman times.

152E. Ancient Art: Greece I (1100 to 500 B.C.)

(4) Del Chiaro
Prerequisite: upper-division standing; recommended preparation: Art History 6A.
The architecture, sculpture, and painting of ancient Greece from the Iron Age (geometric period) to the beginning of the fifth-century classical period, emphasis on the archaic period.

152F. Ancient Art: Greece II (500 to 30 B.C.)

(4) Del Chiaro
Prerequisites: upper-division standing; recommended preparation: Art History 6A, 152E.
The architecture, sculpture, and painting of ancient Greece from the fifth-century classical period through the Hellenistic Age to the advent of the Roman Empire.

152G. Ancient Art: Etruscan Art

(4) Del Chiaro
Prerequisites: upper-division standing; Art History 6A, 152E, and 152F.
The architecture, sculpture, and painting of ancient Italy from prehistoric times through the Etruscans; emphasis on the Etruscans.

152H. Ancient Art: The Roman Empire I (509 B.C.-A.D. 69)

(4) Yegul
Prerequisite: upper-division standing; recommended preparation: Art History 6A.
The architecture, sculpture, and painting of ancient Rome and the early empire from the beginning of the Republic through the Julio-Claudian era.

152I. Ancient Art: The Roman Empire II (A.D. 69 to 337)

(4) Yegul
Prerequisite: upper-division standing; recommended preparation: Art History 6A.
The architecture, sculpture, and painting of the Roman Empire from the Flavian emperors through the Constantinian Age.

152J. Ancient Art: Greek Architecture

(4) Yegul
Prerequisite: upper-division standing; recommended preparation: Art History 6A.
The architecture of the Greek world from the archaic period through the Hellenistic Age.

152K. Ancient Art: Roman Architecture

(4) Yegul
Prerequisite: upper-division standing; recommended preparation: Art History 6A.
The architecture of Rome and the empire.

152L. Ancient Art: Late Roman and Byzantine Architecture

(4) Yegul
Prerequisite: upper-division standing; recommended preparation: Art History 6B.
The architecture of the post-Constantinian world and that of the early Byzantine and Justinianic periods.

153A. Medieval Art: Early

(4) Ayres
Prerequisite: upper-division standing
Architecture, sculpture, painting, and the minor arts of the early Middle Ages in western Europe from the fourth to the eleventh century.

153B. Medieval Art: Byzantine

(4) Ayres
Prerequisite: upper-division standing.
Architecture, sculpture, painting, and the minor arts of the Byzantine world from A.D. 330 to 1453.

153C. Medieval Art: Romanesque

(4) Ayres
Prerequisite: upper-division standing.
Architecture, sculpture, and painting of the Romanesque period in Western Europe from A.D. 1050 to 1200.

153D. Medieval Art: Gothic

(4) Ayres
Prerequisite: upper-division standing.
Architecture, sculpture, and painting of the Gothic period in Western Europe from A.D. 1150 to 1400.

153E. Medieval Art: Italy, Thirteenth and Fourteenth Centuries

(4) Ayres
Prerequisite: upper-division standing.
The emergence of humanistic and civic ideas in the art of the Italian trecento and quattrocento. A survey of large civic programs of secular and secularized ecclesiastical art of the two centuries. Sculpture, architecture, and painting will be discussed

153F. Gothic Painting 1200 to 1400

(4) Ayres
Prerequisite: upper-division standing.
The origins and development of Gothic painting in France, England, and the Lower Rhineland with special reference to Parisian manuscript illumination and to the influence of Italian art in the north during the fourteenth century.

153G. Gothic Architecture and Sculpture

(4) Staff
Prerequisite: upper-division standing.
The study of the Gothic cathedral and its adornment as an expression of medieval cultural and spiritual outlooks.

154B. Pre-Columbian Art of South America

(4) Reents-Budet
Prerequisite: upper-division standing.
The architecture, sculpture, ceramics, textiles, and metalwork of the Andean civilizations from 3000 B.C. to A.D. 1532 will be examined from the technical, formal iconographical standpoints. Specialty dependent on faculty availability.

154C. Pre-Columbian Art of Mexico and Central America

(4) Reents-Budet
Prerequisite: upper-division standing.
The course will treat all of the arts of the Mesoamerican civilizations from 1500 B.C. to A.D. 1520 with emphasis on the growth of formal traditions and the symbolism they carried. Specialty dependent on faculty availability.

154D. Classic Maya Art and Culture

(4) Reents-Budet
Prerequisite: upper-division standing.
The pre-Columbian Maya civilization will be explored, focusing on Maya art and architecture. A conceptual approach, based on formal analysis, will lead to the ability to read and understand Maya art, including iconography, epigraphy, and the archaeological settings.

154E. Maya Hieroglyphic Writing

(4) Reents-Budet
Prerequisite: upper-division standing.
Students will learn to decipher the pre-Columbian hieroglyphic inscriptions of the classic Maya. Decipherment strategy is based upon structural analysis. The interaction of glyphic text and the

accompanying pictorial imagery also will be explored

155B. Fifteenth-Century Painting in Northern Europe

(4) Wallen
Prerequisite: upper-division standing.
The development of painting in the Lowlands, Germany, and France from c. 1380 to 1500. Major artists include Jan van Eyck, Hieronymus Bosch, and the young Durer. The course explores related stylistic and iconographical aspects of sculpture, tapestry, prints, and goldsmithwork.

155C. Renaissance Art in Fifteenth-Century Italy 1400 to 1450

(4) Meller
Prerequisite: upper-division standing.
Fifteenth-century painting, sculpture, and architecture in Italy, principally Florentine from 1400 to 1450.

155D. Renaissance Art in Fifteenth-Century Italy 1450 to 1500

(4) Meller
Prerequisite: Art History 155C.
Fifteenth-century painting, sculpture, and architecture in Italy, principally Florentine from 1450 to 1500.

156A. Italy: High Renaissance

(4) Meller
Prerequisite: upper-division standing.
Roman and Florentine painting, sculpture, and architecture from Leonardo to the sack of Rome.

156B. Sixteenth-Century Art in Northern Europe

(4) Wallen
Prerequisite: upper-division standing.
Painting, sculpture, graphic, and decorative arts in the Lowlands, Germany, France, and England. Durer, Holbein, Grunewald, Bruegel, and the School of Fontainebleau will be covered. The impact of Italian Renaissance and mannerism of northern art.

156C. Mannerism

(4) Meller
Prerequisite: upper-division standing.
Analysis of the pan-European style of mannerism in architecture, painting, and sculpture.

156D. Venetian Painting

(4) Meller
Prerequisite: upper-division standing.
The evolution of Venetian painting from Jacopo Bellini to Jacopo Bassano.

156E. Michelangelo

(4) Meller
Prerequisite: upper-division standing.
The study of the sculpture, painting, architecture, and drawings of Michelangelo.

156F. Leonardo da Vinci

(4) Meller
Prerequisite: upper-division standing.
An examination of the development of the art of Leonardo da Vinci.

156G. Renaissance Architecture

(4) Staff
Prerequisite: upper-division standing.
Architecture and urbanism in Italy in fifteenth and sixteenth centuries. Major monuments, architects, and ideas.

156H. Raphael

(4) Meller
Prerequisite: upper-division standing.
Raphael's work in papal Rome seen in its social-historical context: 1) the development of Raphael's style; 2) new attitudes towards classical antiquity; 3) the phenomenon of teamwork controlled by a single artist, as opposed to the

pattern of competing artists working together; 4) the acceptance and transformations of Raphael's heritage.

157A. Baroque Painting in Italy

(4) Moir

Prerequisite: upper-division standing.

Baroque painting in Italy during the seventeenth and early eighteenth centuries.

157B. Italian Baroque Architecture and Sculpture

(4) Moir

Prerequisite: upper-division standing.

A study of the works of the major architects and sculptors active in Italy from the beginning of the seventeenth century until the early eighteenth century.

157C. Northern Baroque Art

(4) Moir

Prerequisite: upper-division standing.

Architecture, sculpture, and painting in Flanders, Holland, and France; seventeenth and early eighteenth centuries.

157D. Caravaggio and His Followers

(4) Moir

Prerequisites: Art History 6C. Open only to upper-division art history majors.

Lectures on Caravaggio and the dissemination of his style; analysis of literary sources; discussion of problems of connoisseurship, attribution, iconography, and copyists; reconstruction of lost works.

157E. Renaissance and Baroque Architecture

(4) Staff

Prerequisite: upper-division standing.

A survey of architectural creation and development in Europe, fifteenth to seventeenth centuries.

158A. Eighteenth-Century Art: 1685 to 1750

(4) Walker

Prerequisite: upper-division standing.

Painting, sculpture, and architecture in Europe. Course will emphasize painting of France, England, and Venice. Will also emphasize the international character of rococo.

158B. Eighteenth-Century Art: 1750 to 1810

(4) Walker

Prerequisite: upper-division standing.

Painting, sculpture, and architecture in Europe from 1760 to 1810. The course will emphasize the theories underlying these interrelated movements, e.g., primitivism, exoticism, historicism.

159A. Romanticism in Western Europe

(4) Dorra

Prerequisite: upper-division standing.

Goya, David, Ingres, Constable, Turner, Geri-cault, Delacroix, among others, will be discussed.

159B. Impressionism in France

(4) Dorra

Prerequisite: upper-division standing.

Manet, Monet, Renoir, Pissarro, Sisley, Cassatt, Morisot, among others, will be discussed.

159BB. Post-Impressionism

(4) Dorra

Prerequisite: upper-division standing.

Seurat, van Gogh, Gauguin, Cezanne, Munch, Ensor, among others, will be discussed.

159C. Nineteenth-Century Architecture

(4) Gebhard

Prerequisite: upper-division standing.

European and American planning and architecture from 1790 through 1914. Neorationalism to the beginning of the "Early Modern Movement."

The course will treat the relationship between theory, structure, form, and practice during the nineteenth century.

159D. Victorian Art

(4) Walker

Prerequisite: upper-division standing.

English art from 1800 to 1900. Primary emphasis will be on English painting and its relation to nineteenth-century continental art. Architecture and sculpture will also be considered.

159E. French Painting and Graphic Arts 1800 to 1875

(4) Farwell

Prerequisite: upper-division standing.

Leading painters from Ingres through Manet; the Academy; the rise of new graphic techniques and photography as art media and as popular imagery; interrelations of high and popular culture.

159F. Romanticism to New Objectivity: A Survey of German Art 1800 to 1933

(4) Keller

Prerequisite: upper-division standing.

A survey of German romanticism, realism, impressionism, art nouveau, expressionism, surrealism, and other art movements. Special emphasis will be given to the historical and literary background of German art, as well as its impact on mainstream Western art.

159G. Nineteenth-Century Photography in Europe and the United States

(4) Keller

Prerequisite: upper-division standing.

Themes, techniques, historical and aesthetic evolution of photography as an art form.

160A. Twentieth-Century Architecture

(4) Gebhard

Prerequisite: upper-division standing.

European and American architecture from 1920 to the present. Expressionism, the international style, "Period" architecture, the Moderne, and the post-World War II movements. The relationship between architecture, design, painting, and the political and social scene during these decades.

160B. Fauvism and Cubism in France

(4) Dorra

Prerequisite: upper-division standing.

Matisse, Picasso, and their circles.

160C. Dada, Surrealism and Abstraction

(4) Dorra

Prerequisite: upper-division standing.

Duchamp, Picabia, Ernst, Arp, Miro, Tanguy, Dali, among others, and their impact on American developments, will be discussed. Constructionist and abstract developments will also be covered.

160D. Expressionism in Film, Art, and Theater

(4) Walker

Prerequisite: upper-division standing. (Same course as German 160D.)

Treating the social theory, aesthetics, and artistic techniques of expressionism in art, literature, and film.

160H. Contemporary Photography

(4) Keller

Prerequisite: upper-division standing.

American and European post-WW II photography considered as a living art form.

161A. American Art I

(4) Walker

Prerequisite: upper-division standing.

American art, including architecture, sculpture, and painting before the Armory Show, seventeenth century through nineteenth century.

161B. American Art II

(4) Farwell

Prerequisite: upper-division standing.

Survey of American art from the Armory Show to the present, with major emphasis on development in painting and sculpture after World War II.

161C. Contemporary Latin American Art

(4) Favela

Prerequisite: upper-division standing.

Trends in Latin American painting, sculpture, and graphic arts 1960s-present: neo-figurative and abstract movements in Mexico (*Nueva Presencia*) and Argentina (*Otra Figuración*); development of Argentine and Venezuelan kinetic art; constructivist and figurative trends in Colombia. Particular attention to Latin American artists working in New York and Paris.

161D. A History of Latin American Art and Architecture

(4) Favela

Prerequisite: upper-division standing.

Major monuments of new Spanish-Portuguese art and architecture in the New World, sixteenth century to the present. Emphasis on post-conquest mixtures of European and indigenous styles during the colonial period and major developments in modern Latin American art since Independence.

161E. Modern Mexican Painting

(4) Favela

Prerequisite: upper-division standing.

Emphasis on the social-realist art of the muralists Rivera, Orozco and Siqueiros. Specialty dependent on faculty availability.

161F. American Art of the Twentieth Century I: 1900 to 1939

(4) Staff

Prerequisite: upper-division standing.

Twentieth-century painting, sculpture, and architecture in the United States to the eve of World War II. The Eight, the Armory Show, American abstractionists and realists, government patronage, Americans in Europe, Mexican and European artists in the U.S.

161G. American Art of the Twentieth Century II: World War II to Present

(4) Staff

Prerequisite: upper-division standing.

Recent twentieth-century painting, sculpture, and architecture in the United States. Abstract expressionism, color-field, pop, and new realist painting; pop and minimalist sculpture to earthworks, conceptual art, other recent trends.

161H. Major Applications of Photography I

(4) Keller

Prerequisite: upper-division standing.

Photojournalism and the social documentary tradition in twentieth-century America.

161M. Modern Sculpture: American Sculpture Since the Second World War

(4) Staff

Prerequisite: upper-division standing.

American sculpture in the post-war era.

163B. Spanish Arts: Renaissance to Modern

(4) Staff

Prerequisite: upper-division standing.

Fusion of local Spanish types with the Renaissance. Development of baroque, neoclassic, and the emergence of nineteenth- and twentieth-century forms. Studies in architecture, sculpture, painting, and the minor arts. Specialty dependent on faculty availability.

164A. The Landscape

(4) Moir

Prerequisite: upper-division standing.

What Western European artists from the Renaissance to the present have seen in their physical environment (mainly rural but also urban), how they have recorded it, and what it means. Reading, field trips, discussion, papers.

164B. The History of Rome as a Modern City

(4) Moir

Prerequisite: upper-division standing.

A study of the evolution of the urban structure of Rome from the Renaissance to the present. The emphasis will be on the city as an evolving formal entity rather than on individual buildings or on urban sociology.

164C. Museum Practices and Techniques

(4) Dorra

Prerequisites: upper-division standing; consent of instructor. Limited enrollment.

Discussion of various aspects of museum work: management principles, the cataloguing and care of art objects, exhibitions and acquisitions, administrative procedures, museum architecture. Specialist lecturers and visits of museums and their facilities.

164E. Analysis

(4) Farwell

Prerequisite: upper-division standing.

This course is strongly recommended as an elective for those students contemplating professional work in art history. The study of artistic form and visual perception as a tool for the art historian's study of style and expression.

164F. History of Printmaking, from Its Origins to 1800

(4) Wallen

Prerequisite: upper-division standing.

Survey of the evolution of printmaking in Europe, fifteenth through eighteenth century. Technique and imagery, major artists and stylistic movements. Special emphasis on painter-printmakers Durer, Rembrandt, Canaletto, Hogarth.

164G. Modern Prints and Illustrated Books

(4) Wallen

Prerequisite: upper-division standing.

History of modern printmaking c. 1800 to the present. Rise of new techniques; role of prints in stylistic movements (romanticism, impressionism, post-impressionism, cubism, expressionism, etc.). Topics include etching and woodcut revivals, posters, pochoir and silkscreen, photoreproductive techniques, and "artists' books."

165A. Theories of Architecture

(4) Gebhard

Prerequisite: upper-division standing.

A historical analysis of the relationship between architectural theories and architecture and urban planning from the fifteenth through the twentieth century.

165B. Islamic Architecture

(4) Gebhard

Prerequisite: upper-division standing.

Islamic architecture of North Africa; of the Near and the Middle East from the eighth through the eighteenth century.

165C. An Architectural History of Urban Design

(4) Staff

Prerequisite: upper-division standing.

A historical introduction to urban planning and the city in history from ancient to modern times.

Course will be taught from the viewpoint of architectural history.

165D. Architecture and City Planning in California and the Southwest (1600 to the Present)

(4) Gebhard

Prerequisite: upper-division standing.

An analysis of urban and rural planning in the American Southwest from the founding of Santa Fe in 1609 to the present-day environs of the urban areas of Albuquerque, Phoenix, Los Angeles, and San Francisco. A study will be made of the interrelationship of the environment, technology, and imagery, from the Hispanic decades of the seventeenth century through the early nineteenth century to the early 1980s. Field trips will be conducted to important sites and buildings located in Southern California.

165E. Historic Preservation and Architecture

(4) Gebhard

Prerequisite: upper-division standing.

This course will study the relationship between architectural preservation and imagery from the late Hellenistic Age to the present. The major emphasis will be placed on the years from the mid-1900s to the present. Current approaches to preservation and imagery will be compared and contrasted with those of the past.

170A. History of Photography

(4) Keller

Prerequisite: upper-division standing.

A critical survey of nineteenth and twentieth century photography. The medium is studied in cultural context with emphasis on images and the visions which produced them. We will also study the relation between photography and art movements (impressionism, surrealism, photorealism, etc.).

170B. History of Landscape/Cityscape Photography

(4) Keller

Prerequisite: upper-division standing.

Course emphasizes adventurous camera explorations of untouched natural scenery from the Rocky Mountains to Arctic glaciers and African deserts (nineteenth century); and systematic documentation of the known and inhabited world, especially the visual sign language of urban environments (twentieth century).

170C. Social Documentary Photography: A Historical Survey

(4) Keller

Prerequisite: upper-division standing.

The course traces the interrelationship between photographic art history and social history. Topics include American Indian tribes, metropolitan slums, Dust Bowl farm conditions, and present-day minorities such as Blacks and women.

180. Buddhist Art

(4) Myer

Prerequisite: upper-division standing.

The development of Buddhist art and architecture as a result of changing religious practices and concepts; the influence of regional and national styles as Buddhism spread from India south and southeastward as far as Java and north and eastward across Central Asia as far as Japan.

181. The Art of India

(4) Myer

Prerequisites: Art History 6D or permission of instructor; upper-division standing.

The rise and development of native styles in architecture, sculpture, and painting, with emphasis on Hindu and Buddhist problems.

182A. Early Chinese Art

(4) Myer

Prerequisites: Art History 6D or consent of instructor; upper-division standing.

Native traditions and foreign influences in the development of Chinese art from prehistoric times through the ninth century.

182B. Chinese Painting

(4) Myer

Prerequisites: Art History 6D or consent of instructor; upper-division standing.

Chinese art from the tenth to the eighteenth century, with emphasis on painting.

183A. The Art of Japan

(4) Myer

Prerequisites: Art History 6D or consent of instructor; upper-division standing.

Native traditions and foreign influences in the development of Japanese architecture, sculpture, painting, and minor arts.

183B. Japanese Painting

(4) Myer

Prerequisites: Art History 6D or consent of instructor; upper-division standing.

This course will trace the changing and entwined traditions of Japanese painting, those rooted in native concepts and practices and those derived from China.

193. University Art Museum Internship

(4) Farmer

Prerequisites: upper-division standing; 3.0 grade-point average; consent of instructor.

Under supervision of the museum director, students will carry out a specific art museum internship project connected with exhibition preparation or design, cataloging collection, or other professional aspect of museum work. Ten hour/week internship, plus group evaluation session. Written report required.

194. Special Group Studies

(2-4) Staff

Prerequisites: qualified upper-division students, and consent of instructor and chair of department. No more than 4 units per quarter and 12 units total may be taken in lieu of major requirements. Limited to groups of 3-12 persons.

A means of making special studies or meeting special curricular problems.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in art history. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Consent of instructor and chair of the department required. Advanced individual problems.

GRADUATE COURSES

250A. Methods and Techniques in Art History Research

(4) Moir

Prerequisite: graduate standing.

Reading and a series of discussions and research problems designed to give the student understanding of the different approaches to historical study of works of art.

250B. Connoisseurship

(4) Moir

Prerequisite: graduate standing.

Reading, discussion, and practical experience in qualitative analysis of works of art, with particular emphasis on drawings, prints, and medals.

250C. Seminar: History of Printmaking

(4) Wallen

Prerequisites: Art History 168A or equivalent, and graduate standing.

The seminar deals with outstanding printmakers whose work can be seen in the Santa Barbara area. Relevant art historical issues are explored in addition to problems of print connoisseurship.

251B. Seminar on African Arts in Context

(4) Cole

Prerequisite: graduate standing.

Special research in African art.

251C-D. Seminar in Nonwestern Arts

(4-4) Cole

Prerequisite: graduate standing. Individual quarters may not be taken separately for credit. Specific course focus announced before course begins.

A continuous two-quarter seminar on selected topics in African, Oceanic, and/or American Indian arts.

252A. Seminar in Ancient Art

(4) Del Chiaro

Prerequisite: graduate standing.

Special research in ancient art.

252B. Seminar in Roman Art

(4) Yegul

Prerequisites: graduate standing or senior art history majors with consent of instructor.

Special research in Roman and late antique architecture.

252C. Theory and Historiography of Roman Art

(4) Yegul

Prerequisites: graduate standing or senior art history majors with instructor's consent.

Theory, method, and historiography of Roman and late antique art. Emphasis on special problems of current and historical importance. General consideration of methodology in art history.

253A. Seminar in Medieval Art

(4) Ayres

Prerequisite: graduate standing

Special research in medieval art.

253B-C. Seminar in Romanesque-Gothic Art

(4-4) Ayres

Prerequisite: graduate standing. A continuous two-quarter seminar.

Special research in Mosan Romanesque and Gothic art.

254. Seminar in Pre-Columbian Art

(4) Staff

Prerequisite: graduate standing.

Special research in pre-Columbian art.

255A-B. Seminar in Renaissance Art

(4-4) Meller

Prerequisite: graduate standing. Continuous two-quarter seminar, grade given at end of second quarter.

Special research in Renaissance art. A continuous two-quarter seminar.

255C. Seminar in Renaissance Art

(4) Meller

Prerequisite: graduate standing.

Introduction to the research method: problems of the figurative and decorative arts of the Renaissance period.

255D. Art of the Renaissance in Northern Europe

(4) Wallen

Prerequisite: graduate standing.

Special research in northern Renaissance figurative arts of the fifteenth and/or sixteenth centuries.

255E-F. Seminar in Northern Renaissance Art

(4-4) Wallen

Prerequisite: graduate standing. Individual quarters may not be taken separately for credit.

A continuous two-quarter seminar. Research on special problems in northern Renaissance art.

257A. Seminar in Baroque Art

(4) Moir

Prerequisite: graduate standing.

Special research in baroque art.

257B-C. Seminar in Baroque Art and Drawings

(4-4) Moir

Prerequisite: graduate standing.

Study of original drawings of the sixteenth, seventeenth, and eighteenth centuries in relation to painting, sculpture, and architecture of the baroque era, with emphasis on Italy. Practice in research, cataloguing, and connoisseurship will sometimes result in an exhibition catalogue.

258A. Seminar in Eighteenth-Century Art

(4) Walker

Prerequisite: graduate standing.

Special research in eighteenth-century art with special emphasis on painting and prints.

258B-C. Seminar in Eighteenth-Century Art

(4-4) Staff

Prerequisite: graduate standing.

A continuous two-quarter seminar. Special research in eighteenth-century art.

259AA. Seminar in Nineteenth-Century Art (Impressionism and Post-Impressionism)

(4) Dorra

Prerequisite: graduate standing.

A one-quarter special research seminar in nineteenth-century art.

259A-B. Seminar in Nineteenth-Century Art (Impressionism and Post-Impressionism)

(4-4) Dorra

Prerequisite: graduate standing. Individual quarters may not be taken separately for credit.

A continuous two-quarter seminar. Special research in nineteenth-century art.

259C. Seminar in Romanticism and Realism (1800 to 1860)

(4) Farwell

*Prerequisite: graduate standing.***259D. Seminar in Victorian Art**

(4) Walker

Prerequisite: graduate standing.

Special research in English art, 1830 to 1900.

259E-F. Seminar in Romanticism and Realism (1800 to 1860)

(4-4) Farwell

Prerequisite: graduate standing. A continuous two-quarter seminar; first quarter graded in-progress; letter grades for both quarters given at the end of the second quarter.

Special research in European painting and graphic arts, especially in France, 1800-1860.

260A-B. Seminar in European Art of the Twentieth Century

(4-4) Dorra

*Prerequisite: graduate standing. Individual quarters may not be taken separately for credit. A continuous two-quarter seminar. Special research in twentieth-century art.***260D. Seminar in European Art of the Twentieth Century**

(4) Dorra

Prerequisite: graduate standing.

Special research in twentieth-century art.

261A. Nineteenth-Century American Art

(4) Walker

Prerequisite: graduate standing.

Special research in American painting and sculpture, 1750 to 1900.

261B. Twentieth-Century American Art

(4) Farwell

Prerequisite: graduate standing.

American painting and sculpture, 1940 to 1960, with primary emphasis on the formation and development of abstract expressionism.

261C-D. Nineteenth-Century American Art

(4-4) Staff

*Prerequisite: graduate standing. Individual quarters may not be taken separately for credit. A continuous two-quarter seminar. Special research in nineteenth-century American art.***261E. Seminar in History of Photography**

(4) Keller

Prerequisite: graduate standing.

Special problems in the history of photography.

262A-B. Seminar in Latin American Art

(4-4) Favela

Prerequisite: graduate standing. A continuous two-quarter seminar; grade given at end of second quarter.

Special research in the art and architecture of Latin America from the conquest to the present.

262C. Seminar in Modern Latin American Art

(4) Favela

Prerequisite: graduate standing.

The main developments of modernism in late nineteenth and early twentieth century Latin America: late impressionism and symbolism and avant-garde movements in Mexico, Brazil, and Argentina. Frequent reference will be made to European trends and their impact on modern Latin American art.

265. Seminar in Architectural History

(4) Gebhard, Yegul

Prerequisite: graduate standing

Special research in the history of architecture.

266. Seminar in Modern Architecture

(4) Gebhard, Yegul

Prerequisite: graduate standing

Special research on problems of nineteenth- and twentieth-century European or American architecture.

281A. Seminar on Indic Art

(4) Myer
Prerequisite: graduate standing.
Research into iconographic and stylistic problems in the arts of South Asia.

281B-C. Seminar on Arts of South Asia

(4-4) Myer
Prerequisite: graduate standing. Continuous two-quarter seminar.
Special research on indic art, possibly including relationships with cultures of Central and/or Southeast Asia.

282A. Seminar on East Asian Art

(4) Myer
Prerequisite: graduate standing.
Research on select problems on the arts of China, Japan, or Korea.

282B-C. Seminar on Chinese/Japanese Art

(4-4) Myer
Prerequisite: graduate standing. Continuous two-quarter seminar.
Special research on problems of the Chinese/Japanese arts and/or major architecture.

293A-B-C. Methods of Research

(5-5-5) Staff
Prerequisite: graduate standing.
The course focuses on methodological approaches employed by art historians. Selected readings, explanations, and demonstration of methods, including archaeological analysis, codicology, connoisseurship, ideology and social context, architectural theory, and cross-cultural modes.

294. Museum Practices

(4) Farmer
Prerequisite: graduate standing or permission of instructor. May be repeated.
Methods in museum practice. Content will vary according to museum program and art exhibition involved.

295. Seminar: Advanced Readings in Art History

(1-4) Staff
Prerequisites: graduate standing; consent of instructor; department approval.
Source readings for graduate students.

500. Apprentice Teaching

(1-4) Staff
Prerequisites: graduate standing; consent of instructor; department approval. No unit credit allowed toward degree.
For teaching assistants, course includes directed readings, instruction in use of visual aids, pedagogical techniques, design of materials for discussion sections, and methodological analyses. Attendance at lectures in the course to which the teaching assistant is assigned is a requirement.

501. Critical Review Methods

(5) Staff
Prerequisites: graduate standing. Department approval. No unit credit allowed toward degree.
In conjunction with the departmental guest lecture program, graduate students meet after each lecture with a faculty specialist as discussant to critique and review research issues and new contributions proposed by visiting lecturers.

502. Graduate Symposium in Art History

(1-4) Staff
Prerequisites: graduate standing; department approval.
Under the supervision of the graduate adviser and individual faculty advisers, directed study in presentation techniques, bibliographical and publication methods, and professional outreach.

550. Tools for Art Historical Research

(1-4) Staff
Prerequisites: graduate standing; department approval. No credit allowed toward degree.
When undergraduate courses in other departments are needed to build a base for graduate research, a student may be required to audit a course in another department to fulfill requirements in the art history program.

595. Group Studies

(1-12) Staff
Prerequisites: graduate standing; consent of instructor and department approval.
Critical review of research in selected fields.

596. Reading and Research in Art History

(2-6) Staff
Prerequisites: graduate standing; consent of instructor and department approval.
Individual tutorial. A written proposal for each tutorial must be approved by the department chair.

597D. Individual Study

(1-12) Staff
Prerequisites: graduate standing; consent of graduate adviser; department approval. Limited to 12 units per quarter and 24 units total. No unit credit allowed toward degree.
Individual study for examination for the Ph.D. degree.

597MC. Directed Reading and Research in Art History

(1-12) Staff
Prerequisites: graduate standing; consent of graduate adviser; department approval. For Plan II students only. No unit credit allowed toward degree.
Readings and study towards comprehensive examination for M.A.

598T. Master's Thesis Research and Preparation

(1-12) Staff
Prerequisites: graduate standing; consent of graduate adviser; department approval. No credit allowed toward degree. For Plan I students only.
Research underlying the thesis; writing the thesis.

599D. Ph.D. Dissertation Preparation

(1-12) Staff
Prerequisites: graduate standing; consent of graduate adviser; department approval.
Terminal preparation of the dissertation.

Art Studio

**Department of Art, Arts Building 1318;
Telephone (805) 961-3138. Department Chair:
Michael A. Arntz.**

Faculty

Michael A. Arntz, M.A., California State University, Long Beach, Professor (*ceramic sculpture*)
Cheryl O. Bowers, M.F.A., San Francisco Art Institute, Professor (*painting and drawing*)
Gary H. Brown, M.F.A., University of Wisconsin, Professor (*painting and drawing*)
Catherine C. Campbell, M.A., Claremont Graduate School, Professor Emerita
Irma Cavat, Professor (*painting and drawing*)
Steven M. Cortright, M.A., Stanford University, Professor (*printmaking*)

Howard C. Fenton, M.A., UC Los Angeles, Professor Emeritus
Sheldon A. Kaganoff, M.F.A., Claremont Graduate School, Associate Professor (*ceramics*)
Bruce S. McCurdy, M.F.A., Yale University, Professor (*printmaking*)
Conway J. Pierson, M.F.A., California College of Arts and Crafts, Professor (*ceramics*)
William A. Rohrbach, M.A., UC Berkeley, Professor Emeritus (*painting and drawing*)
James D. Smith, Ph.D., University of Oregon, Professor (*painting and drawing, credential program*)
Robert C. Thomas, M.F.A., California College of Arts and Crafts, Professor (*sculpture*)
Guy Williams, Professor (*painting and drawing*)

The Department of Art offers a B.A. degree in art and a graduate program leading to the M.F.A. degree. The undergraduate program is designed to provide the student with thorough and comprehensive training, as well as an understanding of art as a humanistic activity, and to provide students who wish to become practicing artists with a foundation which will prepare them for graduate work and professional school.

Within the art major, students may choose to emphasize painting and drawing, printmaking, sculpture, or ceramics. The department publishes a syllabus describing the content of the courses offered each quarter; the publication is available for study prior to registration in classes. In this syllabus, faculty members describe how classes will be conducted and what kinds of materials the students will use. The syllabus is designed as a guide by which students may select their classes. Student advising is available in the department through the undergraduate adviser and the graduate adviser.

Students with a bachelor's degree in art are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education. Students who plan to teach in the public schools are advised to choose a wide range of courses in studio art. Undergraduate art majors wishing to be teachers must meet the requirements of the UCSB state-approved waiver program or pass the National Teacher Examination (N.T.E.) competency standard in art. Evidence of a passing score on CBEST is also required. (See details in the Graduate School of Education *Announcement*.) The applicant may be required to attend an interview and present a portfolio of signed art work as part of the admission process.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Art

Preparation for the major. Thirty-seven units in lower-division courses including Art Studio 5A-B-C (9 units); Art Studio 10, 12, 14, 16, 18, or 19 (4 courses, 12 units); Art History 6 series (2 courses, 8 units); and History (2 courses, 8 units).

Upper-division major. Forty-four units in upper-division courses (including 32 units selected from upper-division art studio courses) and 12 units of art history, up to 4 units of which may be in lower-division courses. Art studio majors may take any 8 units of art history requirements on a passed/not passed basis.

Students who plan to attend graduate school are advised to complete a minimum of 16 units within a given area of interest (to include painting, sculpture, printmaking, or ceramics) and four additional units of upper-division art history.

Honors Program

The honors program is designed to provide support to honors projects. Applications for admission to the program are made through the department adviser by honors students. Requirements for the program include a grade-point average of 3.5 or better in the major, completion of 90 units, completion of a minimum of twelve 196HA-HB-HC honors units, and an exhibition of completed project work. The application is due in the spring quarter prior to admission into the program. Students participating in the program are also encouraged to apply for the President's Undergraduate Fellowship Awards.

GRADUATE PROGRAM

Master of Fine Arts—Art Studio

Admission

In addition to fulfilling the general requirements for admission to graduate status, each applicant to the graduate program in art must have earned a Bachelor of Arts in art, or its equivalent, with an overall 3.0 grade-point average. The applicant must demonstrate outstanding accomplishment as a student artist by submitting a slide portfolio. Applicants are reviewed by the full studio faculty, and admission is contingent on sponsorship by a faculty member with support of two additional faculty who will form an admitting committee of three. Applicants will be ranked and admitted depending on available space.

Instructions for preparing the slide portfolio, as well as general information about the graduate program, are available from the department graduate consultant. Admission is limited to fall quarter only. By January 31 the slide portfolio and completed application for admission and teaching assistantship must arrive at the Department of Art. Also due by this date are completed fellowship applications, which must be accompanied by six additional slides. (Please include a self-addressed stamped envelope for return of the slides.) Applicants must also take the Graduate Record Exam.

Degree Requirements

One of four emphases must be selected: painting, sculpture, ceramics, or printmaking. Seventy-two quarter-units are required, 36 of which must be studio courses in the 500 (Independent Studies) series. The remaining 36 units must be in graduate-numbered courses (200 and 500); 12 of these units must be taken in graduate seminars; and 12 must be in graduate courses in art history/academic research. Graduate students are expected to complete four to five hours of work per week for each unit. Two years of residency are required for the M.F.A. degree.

There will be two first-year reviews. Following the first review, the student has the option of retaining the committee of three or forming a new committee, hereafter called the thesis committee. After the second review, the thesis committee shall determine whether the student will advance to second-year candidacy.

At the beginning of the second year, the student will meet with the thesis committee to determine the nature of the thesis project. The project will consist of a group of related works in the student's emphasis and will be presented in exhibition in the University Art Museum. It will be accompanied by a thesis document containing slides of the project and a written essay which addresses the development, content, and issues of the thesis work. This document will be placed on file permanently in the Arts Library. The thesis committee will review the student's progress at the end of the second quarter or at the time of the



Students unload the bisque kiln, one of more than a dozen kilns in the sculpture and ceramics area of the art studio department. Objects are given their first firing in the bisque kiln to strengthen them and make them no longer water soluble; then they can be glazed and fired again.

M.F.A. exhibition. The degree will be awarded after successful review of the work. For further details, consult the UCSB *Graduate Division Announcement*.

ART STUDIO COURSES

A maximum of three studio courses may be taken a quarter.

LOWER DIVISION

The department recommends the Art Studio 5A-B-C series be taken at the freshman level. Art Studio courses 10, 12, 14, 16, 18, and 19 may be repeated for credit up to six units. The department requires a repeat from a different instructor. Exceptions require consent of instructor. Freshman seminars are offered on an irregular basis.

4. The Human Figure—Drawing Course for Nonmajors

(3) Staff

Drawing sessions with models, lectures on subject matter, style, techniques, media. Optional choice additional activities include: small group sessions; drawing; anatomy study workshops; Friday drawing workshop; masters drawing copy study; recommended reading; gallery visits; related lectures, films, TV, etc.

5A. Visual Fundamentals

(3) Staff

Open to nonmajors.

Two-dimensional fundamentals of composition, form, and proportion. Introduction to drawing and space including line, tone, volume, perspective, surface, and texture. Basic exposure to materials and techniques.

5B. Visual Fundamentals

(3) Staff

Open to nonmajors.

Fundamentals of color theory including hue, value, intensity, and temperature. The relationship of color to form and space will be explored. Basic exposure to materials and techniques.

5C. Visual Fundamentals

(3) Staff

Open to nonmajors.

Three-dimensional fundamentals of open and closed space, surface manipulation of simple forms, and basic exposure to materials and techniques.

9. Visual Art as Communication

(3) Cortright, McCurdy

A survey of development of techniques used to communicate nontemporal visual information, including fine art and popular imagery. Understanding the relationship of paper, books, printing, and photography, and its impact on culture.

10. Lower-Division Painting

(3) Staff

Recommended: Art Studio 5B. Open to nonmajors.

Introductory problems in various painting media such as watercolor, acrylic, and oils. Fundamentals of color theory and composition. Techniques on various supports, grounds, and paint application.

12. Lower-Division Sculpture

(3) Thomas

Open to nonmajors.

An introduction to sculptural problems and techniques dealing with traditional spatial concepts. Emphasis will be on a variety of sculptural materials used to realize these concepts.

14. Lower-Division Printmaking

(3) Cortright, McCurdy

Recommended: Art Studio 5A. Open to nonmajors.

Introduction to printmaking; emphasis on technical fundamentals and conceptual aspects of graphic arts. Processes of intaglio, lithographic, and screen printing will be emphasized.

15. Studio Process (beginning ceramics) Creativity/Awareness

(3) Staff

A "beginners" experience of studio with emphasis on process rather than goal. Focus on clay as medium of expression, throwing, and hand-building. Resource material to include sensory awareness, Gestalt Psychology, Zen-Buddhism, and other contemporary body/mind disciplines.

16. Lower-Division Ceramics

(3) Arntz, Kaganoff, Pierson

Open to nonmajors.

Introduction to clay as a medium with emphasis on form. Lectures on clays, clay bodies, glazes, and a general survey of ceramics history. Techniques of throwing, handbuilding, glazing, and firing will be covered.

18. Lower-Division Drawing

(3) Staff

Recommended: Art Studio 5A. Open to nonmajors.

Introductory problems in two-dimensional representation with various drawing media, including structural and symbolic implications of human form. Emphasis on organization of vision and thought in terms of drawing techniques and materials.

19. Lower-Division Photography

(3) Staff

Open to nonmajors. May be repeated once for credit, but with a different instructor.
Exploration of photography as a means of artistic expression and showing its relationship to other art media. (To be offered on an irregular basis.)

20. Language of Photography

(3) Staff

The course will survey the interdisciplinary application of photography, stressing its usage as a visual language. It will also offer those with a general interest in photography a survey of more specific areas of usage and possible future study.

22. Visual Thinking and Application of Computer Images

(3) Staff

May be repeated once for credit.

Computer use directed towards visual application. A class stressing the use of computers for visually oriented people and the use of visual thinking for computer oriented people. Experience in either area is welcome but not a prerequisite.

99HA-HB-HC. Lower-Division Honors Studio

(3-3-3) Staff

Prerequisites: open to qualified art studio majors with at least a 3.5 grade-point average in the major, and subject to selection by portfolio/slide review. Departmental petition is required. May be repeated for a total of 12 units.

Independent study, individual problems.

UPPER DIVISION

The specific concepts, techniques, and philosophy of teaching in art studio courses 100 through 120 will vary according to the individual instructor. A syllabus of each instructor's courses will be available in the department office. Courses 100, 101, 105, 106, 110, 111, 115, 119, and 120 may be repeated for credit.

100. Upper-Division Painting

(4) Staff

Prerequisite: three units of Art Studio 10.

Designed for majors. May be repeated more than once in a quarter, but must be from a different instructor. No cumulative limit.
Problems emphasizing development of personal expression in painting in various media. Consideration given to historical painting as well as trends of contemporary painting. The relationship of drawing to painting will be considered.

101. Special Studies in Painting

(4) Staff

Prerequisite: at least one quarter of Art Studio 100.

Special studies in painting utilizing particular faculty interests and/or special departmental facilities. Exact nature of course will be specified in the Department of Art Studio syllabus.

105. Upper-Division Sculpture

(4) Thomas

Prerequisite: three units of Art Studio 12. No cumulative limit. May be repeated more than once in a quarter, but must be from a different instructor.

First year: more complex spatial problems; working with a limited number of sculptural materials, with emphasis on competency in handling two of these materials.

Second year: advanced work in sculptural media; concentration on development of personal sculptural ideas.

106. Special Studies in Sculpture

(4) Thomas

Prerequisite: at least one quarter of Art Studio 105.

Special studies in sculpture utilizing particular faculty interest and/or special departmental facilities. Exact nature of courses will be specified in the Department of Art Studio syllabus.

110. Upper-Division Printmaking

(4) Cortright, McCurdy

Prerequisite: three units of Art Studio 14. May be repeated more than once in a quarter, but must be from a different instructor.

Problems in printmaking including advanced technical processes and color in intaglio and lithographic printing. Emphasis on developing individual competency, both technically and conceptually, through assigned projects and supervised independent study.

111. Special Studies in Printmaking

(4) Cortright, McCurdy

Prerequisite: at least one quarter of Art Studio 110.

Advanced-level course dealing with a specific faculty interest or special departmental facility in

the printmaking area. Exact course content specified in the Department of Art Studio syllabus.

115. Upper-Division Ceramics

(4) Arntz, Kaganoff, Pierson

Prerequisite: three units of Art Studio 16. May be repeated more than once in a quarter, but must be from a different instructor.

Investigation at an individual level of raku, low fire, salt, and high fire range. Lectures and problems relating to technical aspects of ceramic chemistry. Personal control of form from clay body, fabrication, glazing, to and including firing.

116. Special Studies in Ceramics

(4) Arntz, Kaganoff, Pierson

Prerequisite: at least one quarter of Art Studio 115.

Advanced-level course dealing with a specific faculty interest or a special departmental facility in the ceramics area. Exact course content specified in the Department of Art Studio syllabus.

117. Special Studies in Drawing

(4) Staff

Prerequisites: at least one quarter of Art Studio 118 and consent of instructor. May be repeated to a maximum of 12 units.

Special studies in drawing utilizing particular faculty interests and/or special departmental facilities.

118. Upper-Division Drawing

(4) Staff

Prerequisite: three units of Art Studio 18; designed for majors. May be repeated more than once in a quarter, but must be from a different instructor.

Problems emphasizing development of personal expression in drawing, utilizing various media. Consideration given to historical as well as contemporary trends of drawing.

119. Media for Visual Communication

(4) Smith

Prerequisite: consent of instructor. May be repeated for credit.

A laboratory course stressing experimentation, creation, and use of multi-image projection materials.

120. Upper-Division Photography

(4) Staff

Prerequisite: At least one quarter of Art Studio 19 or consent of instructor. May be repeated for credit.

Exploring photography as artistic expression and its relationship to other art media. To be offered on an irregular basis.

122. Visual Thinking and Application of Computer Images

(4) Staff

Prerequisite: Art Studio 22. May be repeated for credit an unlimited number of times.

Exploring the role of the computer in the conceptualization, visualization, and creation of art. Emphasis will be on multiples, sequential imagery, animation, and color as facilities permit.

123. Papermaking

(4) Brown

Prerequisite: consent of instructor. May be repeated for credit to a maximum of 12 units.

Introduction to historical and contemporary methods of handmade papermaking leading to innovative uses of handmade paper as an integral part of art forms.

125. American Art of the Past Two Decades

(4) Staff

Prerequisite: upper-division or graduate class standing.

This class will cover developments in American art since 1950 from an artist's point of view, with emphasis on the last decade. Investigation of recent art movements including minimal, process, body conceptual, postminimal, and performance.

192. Internship in Art Studio

(2-4) Staff

Prerequisites: upper-division standing and overall 3.0 grade-point average, and approval by the department. Units are calculated on a three hours of work per week for one unit basis. May be repeated to a maximum of four units credit.

Opportunities in applied learning related to visual art through local business, government, or institutional organizations, working under faculty direction with periodic and final written reports and supporting portfolio.

194. Special Group Studies

(2-4) Staff

Prerequisites: qualified upper-division students, and consent of instructor and chair of department.

A means of making special studies or meeting special curricular problems.

196HA. Upper-Division Honors Studio

(4) Staff

Prerequisites: open to qualified art studio majors with at least a 3.5 grade-point average in the major and at least a 3.0 grade-point average overall; upper-division standing; acceptance into department's honors program; department petition required.

Independent study, individual problems. This course is to be followed by Art Studio 196HB and 196HC. Required to complete the honors program: the three course sequence followed by a public exhibition of work accomplished.

196HB. Upper-Division Honors Studio

(4) Staff

Prerequisites: Art Studio 196HA; department petition required.

Independent study, individual problems. This course is to be followed by Art Studio 196HC. Required to complete the honors program: the three course sequence followed by a public exhibition of work accomplished.

196HC. Upper-Division Honors Studio

(4) Staff

Prerequisites: Art Studio 196HB; department petition required.

Independent study, individual problems. Required to complete the honors program. This course is to be followed by a public exhibition of work accomplished in the three course sequence.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in art studio. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Consent of instructor and chair of department required.

Advanced individual problems.

GRADUATE COURSES**240A. Graduate Seminar in Visual Arts Education**

(4) Smith

Prerequisites: graduate standing and consent of instructor.

A means of making special studies and meeting special curricular problems.

240C. Graduate Seminar in Ceramics

(4) Arntz, Kaganoff, Pierson

Prerequisites: graduate standing and consent of instructor.

Special problems in ceramics.

240D. Graduate Seminar in Drawing

(4) Staff

Prerequisites: graduate standing and consent of instructor.

Problems in drawing and various media.

240P. Graduate Seminar in Painting

(4) Staff

Prerequisites: graduate standing and consent of instructor.

Group discussion and criticism with emphasis on original works. Topics of a contemporary and historical nature will be introduced.

240PM. Graduate Seminar in Printmaking

(4) Cortright, McCurdy

Prerequisites: graduate standing and consent of instructor.

Special problems in printmaking expression and techniques.

240S. Graduate Seminar in Sculpture

(4) Thomas

Prerequisites: graduate standing and consent of instructor.

Problems in various sculptural media.

245. Studio Graduate Seminar

(4) Staff

Prerequisites: graduate standing and consent of instructor.

A general seminar for studio graduate students. Content will vary depending on instructor.

246. Professionalism

(4) Staff

Prerequisite: second-year graduate student.

Seminar will address problems of professionalism and survival for graduating M.F.A. students. Portfolios, resumes, commercial galleries, alternate spaces, sales and commission policies, studio spaces, art world politics, taxes, etc., will be discussed by faculty and guest speakers.

290. Seminar in Curriculum of Instructional Procedures and Materials Used in the Teaching of Art in the Schools

(4) Smith

Prerequisites: graduate standing and consent of instructor.

Reading and discussion of the knowledge and understanding of art teaching with emphasis on the application of techniques learned.

293. Problem Seminar in the Teaching of Art

(1) Smith

Prerequisites: graduate standing and consent of instructor.

In-depth discussions of problems and solutions in teaching art in the schools.

295. Seminar in Art Methods for the Elementary School

(3) Smith

Prerequisites: graduate standing and consent of instructor.

Procedures used in the teaching of art in the elementary school, including the integration of art and humanities.

501. Teaching Assistant Practicum

(1-4) Staff

Prerequisite: graduate standing.

Practice of teaching art.

591A. Directed Study in Visual Arts Education

(2-12) Smith

Prerequisites: consent of instructor and graduate standing.

Individual tutorial.

591C. Directed Study for the M.F.A. in Ceramics

(2-12) Arntz, Kaganoff, Pierson

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591DP. Directed Study for the M.F.A. in Drawing/Painting

(2-12) Staff

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591PM. Directed Study for the M.F.A. in Printmaking

(2-12) Cortright, McCurdy

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

591S. Directed Study for the M.F.A. in Sculpture

(2-12) Thomas

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

593MS. M.F.A. Thesis Project

(2-12) Staff

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

594. Special Studies in Studio Art

(4) Staff

Prerequisite: graduate standing.

A means of making special studies and meeting special curricular problems.

595. Directed Historical Reading and Research

(4) Staff

Prerequisite: graduate standing.

Independent research involving extensive reading and written essay on a particular period, artist, or body of work with a historical context.

Asian American Studies

Asian American Studies Program, Ellison Hall
2843; Telephone (805) 961-2371.
Advisory Committee Chair: Donald E. Brown.

Advisory Committee

Donald E. Brown, Ph.D. (Anthropology)
Haruhiro Fukui, Ph.D. (Political Science)
Hsiu-Zu Ho, Ph.D. (Psychology)
Charles N. Li, Ph.D. (Linguistics, Anthropology)

The purpose of the Asian American Studies Program is twofold: (1) to offer students an opportunity to study and understand the heritage and experience of Asian Americans, and (2) to sponsor the systematic gathering, development, and study of new knowledge of how Asia has influenced the development of the United States in the areas of social history, ethnicity, international relations, economy, and cultural expression.

The Asian American Studies Program offers courses that fulfill the American History and Institutions requirement. Students who want special expertise in the field of Asian American Studies may elect the program in addition to the major they have selected. Students interested in a California teaching credential should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

ASIAN AMERICAN STUDIES PROGRAM

A minimum of 30 units in Asian American Studies is required as preparatory background for a California teaching credential. Asian American Studies courses numbered 100A-B, 110, and 199 are required. Selection of additional courses to complete the program should be made from the two categories listed below, in consultation with a faculty adviser in Asian American Studies.

American History and Society: at least two courses selected from History 17A-B, 177; Political Science 161; Sociology 128; Black Studies 120.

Asian History and Culture: at least two courses selected from History 185A-B, 187A-B; Anthropology 145; Religious Studies 164A-B, 166A-B-C-D-E-F-G-H, 167A-B-C; Art History 6D; Chinese 112, 140; Japanese 112, 140.

ASIAN AMERICAN STUDIES COURSES

UPPER DIVISION

100A. Social History of Asian Americans
(4)
Prerequisite: upper-division standing or consent of instructor.
An introduction to Asian Americans focusing on an analysis of the social and historical forces that gave rise to the successive immigration and formation of Asian ethnic groups in American society from 1840 to 1945.

100B. Asian Americans in Contemporary Society
(4)
Prerequisite: upper-division standing or consent of instructor.
Discussion of changing status and roles of Asian Americans since 1945, focusing upon contemporary issues, social problems, economic mobility, ethnicity, and analysis of situations and possible solutions or outcomes relating to Asians in America. Sociological theories of ethnicity and social change will be considered in the light of experiences of Asian American ethnic groups.

110. Comparative Asian American Communities
(4)
An analysis of Chinese, Filipino, Japanese, and Korean communities in the United States. Topics such as pattern of settlement, ethnic solidarity, entrepreneurship, social structure, leadership, politics, and intra- and interethnic conflict will be discussed from a comparative perspective.

120. The United States and the Pacific Rim
(4)
An interdisciplinary course which examines the interaction of the major Asian societies with the United States in the formation of a Pacific Basin community of nations. Analysis of cultural diffusion, demographic movements, economic development, geopolitics, intraregional competition and rivalry, and other issues affecting the major nations facing the Pacific Basin.

146. Special Topics in Asian American Studies
(4)
Course may be repeated to a maximum of 16 units.
Lectures in special areas of interest in Asian American studies. Specific course titles and content to be announced by the department when offered.

190. Fieldwork on Asian American Topics
(4)
Prerequisites: Asian American Studies 100A or 100B, and 110.
This course will train students to design and carry out fieldwork in Asian American communities and social settings. Emphasis will be on learning the methods of field research and on analysis of field data.

191. Field Projects in Asian American Community Development and Social Services
(1-4)
Prerequisites: Asian American Studies 100A or B, and Asian American Studies 110 or 190; and consent of instructor. Must be taken P/NP.
Course may be repeated to a maximum of eight units.
The problems, dilemmas and potentialities of service institutions (both established and alternative), and voluntary organizations are explored through direct participation and observation in Asian American community settings.

194. Group Studies in Asian American Studies
(1-4)
Prerequisites: Asian American Studies 100A or 100B, and consent of instructor. Course may be repeated twice provided topics are different. Course limited to 12 or fewer students.
Group studies in topics dealing with Asian American studies.

199. Independent Studies in Asian American Studies
(1-5)
Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Asian American studies. Students are limited to five units per quarter, 12 units total in Asian American Studies and 30 units total in all 198/199 courses combined. Consent of instructor required.
To provide special guidance for exceptional advanced students in formulation and execution of independent projects and in writing and presenting the results.

Asian Studies

Committee on Asian Studies,
Phelps Hall 6326; Telephone (805) 961-2131 or 961-4687.
Advisory Committee Chair: Kuo-Ch'ing Tu.

Advisory Committee

Alan P.L. Liu, Ph.D. (Political Science)
Mattison Mines, Ph.D. (Anthropology)
Kenneth H. Pai, M.F.A. (Oriental Languages)
Kuo-Ch'ing Tu, Ph.D. (Oriental Languages)

Asian Studies is an interdepartmental program consisting of an undergraduate major leading to the B.A. degree and a graduate program leading to the M.A. Both the undergraduate and the graduate programs enable the student to study an Asian area (China, Japan, or India) through two or more academic disciplines and, at the same time, to acquire at least two years of training in a language relevant to the area of study. The disciplines that contribute most to Asian Studies at UCSB are anthropology, art history, oriental languages, history, philosophy, political science, and religious studies. The languages which may be taken in conjunction with Asian Studies courses are Chinese (Mandarin and Classical), Japanese, and Sanskrit.

The program chair serves as undergraduate and graduate adviser. It is important to consult early with the adviser to ensure a proper balance between breadth and concentration in the study plan. In addition, students are required to meet with the adviser at least once each year to discuss their work and any issues that have arisen, or seem likely to arise, in the course of their studies.

Interdisciplinary study of an Asian culture, together with language training, provides a good basis for specializing at the M.A. or Ph.D. level. In addition, the Asian Studies major provides specialized knowledge for students who anticipate a career in business, law, journalism, government service, or museum work. It should be noted, however, that additional training in a professional school is necessary for entrance into many of these fields.

After completing specific prerequisites, students with a major in Asian Studies are eligible to pursue a California teaching credential. Those interested should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Asian Studies

Preparation for the major. Students must have at least two years (24-27 units) of an Asian language pertaining to the area of their interest (or demonstrate an equivalent level of competence). In addition, they must take at least eight units of lower-division work selected from the following list: Art History 6D; History 15, 19, 80, 86, 90; Japanese 32; Philosophy 2; Religious Studies 3, 20, 21.

Upper-division major. The major consists of 40 units of upper-division courses selected from two or more disciplines and generally concentrating on China, Japan, or India. It is advisable that one of the disciplines be history; in any case, all majors are required to take four units of Asian history chosen from the lower- or upper-division list. Courses for the major may be selected from

the following list. Courses outside the list may be substituted in consultation with the adviser to accommodate individual interests consonant with the overall purpose of the program.

Course List for Upper-Division Majors

Anthropology

- 103. Peoples and Cultures of Asia
- 138A. Traditional Chinese Society
- 138B. Contemporary Chinese Society
- 142. Peoples and Cultures of India
- 144. Peoples and Cultures of Southeast Asia
- 145. Far Eastern Societies

Art History

- 151C. Arts of the South Seas
- 180. Buddhist Art
- 181. The Art of India
- 182A. Early Chinese Art
- 182B. Chinese Painting
- 183A. The Art of Japan
- 183B. Japanese Painting

Asian American Studies

- 100A. Social History of Asian Americans
- 100B. Asian Americans in Contemporary Society
- 110. Comparative Asian American Communities
- 120. The United States and the Pacific Rim
- 146. Special Topics in Asian American Studies
- 190. Field Work on Asian American Topics
- 191. Field Projects in Asian American Community Development and Social Service
- 194. Group Studies in Asian American Studies

Chinese

- 101A-B-C. Elementary Classical Chinese
- 102A-B-C. Advanced Chinese Conversation
- 105. Workshop in Chinese Translation
- 110A-B. Survey of Classical Chinese Literature
- 111. The Traditional Chinese Short Story
- 112. Survey of Modern Chinese Literature
- 115A-B. Imagism, Haiku, and Chinese Poetry
- 116. A Comparative Approach to Chinese Poetry
- 120. Readings in Modern Social and Political Writings
- 122A-B-C. Advanced Modern Chinese
- 124A-B. Readings in Modern Chinese Literature
- 125. Business Chinese
- 130A-B-C. Intermediate Classical Chinese
- 132A-B. Selections from Classical Poetry
- 133. Advanced Readings in Classical Prose
- 134. Advanced Readings in Classical Poetry
- 135. Advanced Readings in Modern Literature
- 136. Advanced Readings in Vernacular Literature
- 137. Readings in Vernacular Drama
- 145. Chinese Mythology
- 198. Readings in Chinese
- 199. Independent Studies in Chinese

Eastern Languages

- 130. The Scripts of Asia: The Origins of Writing

Film Studies

- 120. Studies of Japanese Cinema

History

- 104. Great Minds in World History
- 180. Southeast Asian History
- 183. Gandhi and Modern India
- 184A-B-C. China's Major Dynasties
- 184P. Proseminar in China's Major Dynasties

- 185A. Modern China from 1600 to 1900
- 185B. Modern China from 1900 to Date
- 186A. History of China: Ancient China to A.D. 200
- 186B. History of China: Medieval China, A.D. 200 to 1000
- 186C. History of China: Early Modern China, A.D. 1000 to 1600
- 186P. Proseminar in History of China
- 187A. Japan Under the Tokugawa Shoguns
- 187B. Modern Japan
- 187C. Recent Japan
- 187P. Proseminar in Japanese History
- 187O. Courtiers and Warriors: Views of Japanese Culture
- 188. History of Japanese Architecture and Urbanism
- 189Q. Japan through American Eyes
- 190A. China's Social and Institutional History
- 190B. Problems in Chinese History
- 190C. History of Chinese Thought

Japanese

- 101. The Structure of Classical Japanese
- 105. Syntax and Pragmatics of Japanese
- 110A-B. Survey of Pre-Modern Japanese Literature
- 112. Survey of Modern Japanese Literature
- 120A-B-C. Readings in Modern Japanese
- 124A-B. Readings in Japanese Literature
- 130A-B-C. Advanced Readings in Modern Japanese
- 135. Advanced Special Readings
- 140. Topics in Japanese Culture
- 150. Japanese Society in Films
- 198. Readings in Japanese
- 199. Independent Studies in Japanese

Philosophy

- 123A-B. Classical Chinese Philosophy

Political Science

- 131. China in World Affairs
- 135. Government and Politics of Japan
- 136. Government and Politics of China
- 139. Government and Politics of Southeast Asia

Religious Studies

- 149. Modern Japanese Nationalism
- 150. Hindu and Christian Ethics: Dharma vis-a-vis Righteousness
- 157. Religious Arts of Asia
- 158. Religion and Hindu Iconography
- 159A-B-C-D-E-F-G-H-I-J-K-L. Religious Literature in Sanskrit
- 160. Religious Systems of India
- 161A. Yoga Traditions of India
- 161B. Buddhist Meditation Traditions
- 162A. Indian Philosophy and Religion
- 162B. Seminar on Shankara and Nagarjuna
- 164A-B. The Buddhist Tradition
- 165. The Upanishadic Tradition of India
- 166A. Religion in Chinese Culture
- 166B. Taoist Traditions of China
- 166C. Confucian Traditions: The Classical Period
- 166D. Confucian Traditions: "Neo-Confucianism"
- 166E. The Flowering of Chinese Buddhism
- 166F. Religious Literature in Chinese: Buddhist Texts
- 166G. Religious Literature in Chinese: Confucian Texts
- 166H. Religious Literature in Chinese: Taoist Texts
- 167A-B. Religion in Japanese Culture
- 167C. Japanese New Religions

Sociology

- 161. Sociology of the People's Republic of China

GRADUATE PROGRAM

Master of Arts—Asian Studies

Admission

Applicants to the M.A. program in Asian Studies must meet the general requirements for admission to graduate standing. They must submit a statement of purpose to the chair of the Advisory Committee on Asian Studies describing their preparation for the work in the program and the objective they hope to attain. Preparation may include an undergraduate degree in a relevant discipline as well as courses dealing with Asia; some training in an Asian language is recommended. On the basis of this statement, the committee will decide whether applicants are eligible for the program and whether an interdisciplinary program is best suited to their needs. Inquiries regarding the M.A. program in Asian Studies should be directed to the Chair, Advisory Committee on Asian Studies, or to the Graduate Division, University of California, Santa Barbara, CA 93106.

Degree Requirements

Students admitted to the M.A. program may pursue the degree under Plan 1 or Plan 2. Plan 1 students must complete 30 units of upper-division and graduate work, fulfill the language requirement, and write a thesis. The 30 units must include no fewer than 12 units of graduate work taken in at least two departments. Students who choose this plan must satisfy two additional conditions for admission to candidacy: (1) they must demonstrate the capacity to do some of their thesis research in an Asian language pertaining to their region of interest; and (2) they must submit to the Committee on Asian Studies one research paper, written for any graduate course, as evidence of their capacity to conduct intellectual inquiry and to write competently.

The student may choose a thesis adviser, but the finished thesis must be approved by a committee consisting of the thesis adviser and two additional faculty members nominated by the chair of the Committee on Asian Studies and appointed by the dean of the Graduate Division.

To fulfill the language requirement, courses in one Asian language pertaining to the region of the student's interest must be taken each quarter for a total of 24-27 units in one language, including lower-division units. Upper-division language courses may be counted for up to eight units toward completion of the required units of regular course work. The language requirement will be waived for a student who enters the program with sufficient competence to use an Asian language in regular course work, and it will be considered fulfilled at any stage in the program at which the student achieves such competence.

Plan 2 students must complete 36 units of upper-division and graduate work, fulfill the same language requirement described in Plan 1 above, and pass a comprehensive examination. The 36 units include not fewer than 18 units of graduate work taken in at least two departments.

Students who elect Plan 2 need not have mastered an Asian language to a level at which it can be used for research, but they must demonstrate, by at least a B average in the language courses, that they can deal effectively with the structural and semantic problems of the language and are capable of pursuing this study independently. They must also demonstrate the ability to conduct intellectual inquiry and to write competently by submitting two research papers, written for any graduate course, to the Committee on Asian Studies. After approval, students will be permitted to go on to the comprehensive examination, consisting of two three-hour sessions covering their

chosen fields in two disciplines; they will be required to prove both a factual and an interpretive understanding of the region of their interest.

In addition to upper-division courses in the major, graduate students may take courses from the following list. Upper-division and graduate courses outside the list may be substituted on consultation with the adviser. Anthropology 270C-D; Art History 282; Chinese 201, 596, 598; History 200AS, 201AS, 280, 281, 284, 285, 286, 288; Japanese 201, 596, 598; Philosophy 223A-B; Political Science 279, 285, 286; Religious Studies 202, 203, 204, 206, 207, 246, 254, 255, 257, 259, 260.

Biochemistry and Molecular Biology

Graduate Secretary, Department of Biological Sciences, Building 478, Room 1215; Telephone (805) 961-3023. Director: Leslie Wilson. Co-Director: John A. Carbon

Committee

Thomas C. Bruce, Ph.D. (Chemistry)
John A. Carbon, Ph.D. (Biochemistry)
Ellis Englesberg, Ph.D. (Microbiology)
Daniel Morse, Ph.D. (Genetics)
Leslie Wilson, Ph.D. (Biochemistry)

The interdepartmental graduate program in biochemistry and molecular biology offers studies leading to the Ph.D. degree. The program is administered jointly by the Departments of Biological Sciences and Chemistry, and emphasizes the understanding of biological phenomena at the molecular level. Research areas currently under active investigation on campus include human cell genetics, kinetics and regulation of enzymes, nuclear-cytoplasmic relationships, the cytoskeleton, mechanisms of cellular differentiation, synthetic recombinants and gene transfer, and molecular virology and immunology. A complete listing of research interests of the participating faculty can be obtained by writing to the above address.

The program accommodates students with a diversity of backgrounds and career goals and accepts students with undergraduate degrees in either chemistry or biology. Ph.D. candidates in the program must be registered as full-time students in either the Department of Biological Sciences or the Department of Chemistry. Highly individualized programs of instruction can be undertaken by a student enrolled in the program after consultation with and approval by the program committee. Approximately 20 faculty members from the sponsoring departments are available to direct approved research projects under the auspices of the program.

Other graduate programs in various aspects of molecular biology, and bio-organic and biophysical chemistry are offered by the Departments of Biological Sciences and Chemistry. Consult the catalog descriptions of these two departments for details.

Doctor of Philosophy—Biochemistry and Molecular Biology

Admission

In addition to fulfilling the general requirements for admission to graduate status, the applicant will normally hold a bachelor's degree in chemistry, biochemistry, or another biological science. Undergraduate preparation should include the equivalent of the following UCSB courses: Chemistry 1A-B-C; Chemistry 130A-B-C; Chemistry

6A-B-C; Chemistry 113A-B-C; Biology 130A; Biology 108A-B-C; Mathematics 3A-B-C followed by a fourth quarter of mathematics (differential equations recommended); Physics 6A-AL-B-BL-C-CL or Physics 8A-AL-B-BL-C-CL.

Applicants with strong undergraduate records who lack some of the preparation indicated above may be admitted with the condition that they complete necessary course work early in their graduate careers.

Degree Requirements

A complete program of courses will be arranged for each student on an individual basis in consultation with the program committee. The student may emphasize either biochemistry or molecular biology, but the common core of courses must be completed by all students in the program.

Common core: Biology 255 (one quarter); Chemistry 261A; Biology 226; Chemistry 142B (or a suitable graduate-level course in biochemistry upon approval of the director); Biology 260; Biology 262.

Students must pass a first qualifying exam, consisting of an oral research proposition, at the beginning of the second year, and a second qualifying exam, consisting of a comprehensive written exam or research proposition and an oral exam, at the beginning of the third year. Topics for the research propositions and/or comprehensive exams are to be selected from three of the areas listed below; at least two area groups must be represented. Appropriate areas of study offered by sections of the Department of Biological Sciences or other departments may be substituted for one of the area groups with the approval of the program committee. The candidate must demonstrate a reading knowledge of the scientific literature in German, Russian, or French.

Area Group A: macromolecular structure — proteins, nucleic acids, and polysaccharides.

Area Group B: (1) bio-organic chemistry and models of enzyme action, (2) general metabolism and metabolic control, (3) enzymology.

Area Group C: (1) molecular basis of genetics, (2) gene regulation.

Students will be expected to begin research for the doctoral dissertation early in their graduate careers; research directors may be selected from appropriate faculty in the Department of Biological Sciences or the Department of Chemistry with the approval of the program committee.

Biological Sciences

Department of Biological Sciences, Building 478, Room 1200A; Telephone (805) 961-3511. Department Chair: Leslie Wilson.

Faculty

Alice L. Alldredge, Ph.D., UC Davis, Professor (*marine biology*)
Daniel Botkin, Ph.D., Rutgers University, Professor (*ecology*)
John A. Carbon, Ph.D., Northwestern University, Professor (*biochemistry*)
James F. Case, Ph.D., Johns Hopkins University, Professor (*neurobiology*)
Vernon I. Cheadle, Ph.D., Harvard University, Chancellor Emeritus
James J. Childress, Ph.D., Stanford University, Professor (*ecological physiology*)
Rolf E. Christoffersen, Ph.D., UC Los Angeles, Assistant Professor (*plant molecular biology*)

Peter M. Collins, Ph.D., University of London, Associate Professor (*endocrinology*)
Joseph H. Connell, Ph.D., Glasgow, Professor (*population ecology*)
Scott D. Cooper, Ph.D., University of Wisconsin, Associate Professor (*aquatic ecology and limnology*)
James Cronshaw, D.Sc., Ph.D., Leeds, Professor (*cell biology*)
John E. Cushing, Ph.D., California Institute of Technology, Professor Emeritus
Demorest Davenport, Ph.D., Harvard University, Professor Emeritus
Barbara B. DeWolfe, Ph.D., UC Berkeley, Professor Emerita
Diane E. Eardley, Ph.D., UC Berkeley, Associate Professor (*cellular immunology*)
Alfred W. Ebeling, Ph.D., UC Los Angeles and Scripps Institution of Oceanography, Professor (*zoology*)
John A. Endler, Ph.D., University of Edinburgh, Professor (*population and ecological genetics*)
Ellis Englesberg, Ph.D., UC Berkeley, Professor (*microbiology, genetics*)
Katherine Esau, Ph.D., UC Berkeley, Professor Emerita
Stuart C. Feinstein, Ph.D., UC San Francisco, Assistant Professor (*molecular biology and neurobiology*)
Steven K. Fisher, Ph.D., Purdue University, Professor (*neurobiology*)
Aharon Gibor, Ph.D., Stanford University, Professor (*cell biology*)
John R. Haller, Ph.D., UC Los Angeles, Associate Professor (*systematic botany*)
Garrett Hardin, Ph.D., Stanford University, Professor Emeritus
Sally J. Holbrook, Ph.D., UC Berkeley, Associate Professor (*population ecology*)
Robert W. Holmes, Ph.D., Oslo, Professor (*marine botany and biological oceanography*)
W. Neil Holmes, D.Sc., Ph.D., Liverpool, Professor (*physiology*)
Robert S. Jacobs, Ph.D., Loyola University, Professor (*pharmacology*)
David M. Kohl, Ph.D., State University of New York, Lecturer with Security of Employment, Health Sciences Adviser (*developmental biology*)
Armand M. Kuris, Ph.D., UC Berkeley, Professor (*parasitology, marine ecology*)
Philip C. Laris, Ph.D., Princeton University, Professor (*cell physiology*)
Nancy L. Lee, Ph.D., University of Pittsburgh, Professor (*molecular biology, biochemistry*)
Bruce E. Mahall, Ph.D., UC Berkeley, Associate Professor (*plant ecology*)
John M. Melack, Ph.D., Duke University, Associate Professor (*zoology and limnology*)
Daniel Morse, Ph.D., Albert Einstein College of Medicine, Professor (*molecular genetics, biochemistry, marine biology, developmental biology*)
Maynard F. Moseley, Ph.D., University of Illinois, Professor Emeritus
Cornelius H. Muller, Ph.D., University of Illinois, Professor Emeritus
William W. Murdoch, Ph.D., Oxford University, Professor (*population ecology*)
Nalini Nadkarni, Ph.D., University of Washington, Assistant Professor (*ecosystems ecology*)
Henry I. Nakada, Ph.D., Temple University, Professor Emeritus
Michael Neushul, Jr., Ph.D., UC Los Angeles, Professor (*marine phycology*)
Elmer R. Noble, Ph.D., UC Berkeley, Professor Emeritus
Eduardo Orias, Ph.D., University of Michigan, Professor (*genetics*)

Barbara B. Prezelin, Ph.D., Scripps Institution of Oceanography, Associate Professor (*marine biology*)
 Ian K. Ross, Ph.D., McGill University, Professor (*cell biology, mycology*)
 Stephen I. Rothstein, Ph.D., Yale University, Professor (*evolutionary biology, ecology, ethology*)
 Charles E. Samuel, Ph.D., UC Berkeley, Professor (*virology, biochemistry*)
 Duane Sears, Ph.D., Columbia University, Associate Professor (*biochemistry*)
 Dale M. Smith, Ph.D., Indiana University, Professor (*systematic botany*)
 Allan Stewart-Oaten, Ph.D., Michigan State University, Associate Professor (*mathematical biology, statistics*)
 Beatrice M. Sweeney, Ph.D., Radcliffe College, Professor Emerita
 Samuel S. Sweet, Ph.D., UC Berkeley, Associate Professor (*vertebrate morphology*)
 George Taborsky, Ph.D., Yale University, Professor (*biochemistry*)
 Robert K. Trench, Ph.D., UC Los Angeles, Professor (*biology*)
 Edward L. Triplett, Ph.D., Stanford University, Professor (*biology*)
 Robert R. Warner, Ph.D., Scripps Institution of Oceanography, Professor (*marine ecology*)
 Adrian M. Wenner, Ph.D., University of Michigan, Professor (*natural history of arthropods*)
 Leslie Wilson, Ph.D., Tufts University, Professor (*biochemical pharmacology*)

Affiliated Faculty

Raymond C. Smith, Professor of Geography
 James W. Valentine, Professor of Geological Sciences
 Thomas M. Hooker, Professor of Chemistry

The Department of Biological Sciences offers opportunities for obtaining the Bachelor of Arts degree through ten departmental majors—aquatic biology, biochemistry-molecular biology, biological sciences, botany, ecology and evolution, environmental biology, microbiology, pharmacology, physiology and cell biology, and zoology—and the Bachelor of Science degree in pharmacology. The department offers graduate programs leading to the degrees of Master of Arts and Doctor of Philosophy, with emphases in four areas: aquatic and population biology, biochemistry-molecular biology, environmental and evolutionary biology, and physiology and cell biology. An interdepartmental graduate program is offered in biochemistry and molecular biology, in cooperation with the Department of Chemistry. In addition, a wide range of courses is available to all undergraduates for elective enrollment or for the support of their preparation for degrees in other departments or programs.

Many students in the Department of Biological Sciences prepare for entry into graduate or professional schools. Students should become familiar with the requirements of several institutions offering work in the specialty that interests them, and then discuss their programs with their adviser. In general, students preparing for careers in medicine, dentistry, nursing, and laboratory work select biochemistry-molecular biology, biological sciences, microbiology, pharmacology, physiology and cell biology, or zoology as their major. Aquatic biology, biological sciences, botany, ecology and evolution, physiology and cell biology, or environmental biology are suitable preparation for further study in agriculture, forestry, and wildlife and water management.

After completion of specific prerequisites, students with a bachelor's degree in biological sciences are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

The department undergraduate academic adviser is available for counseling on matters such as degree requirements, course substitutions, petitions, and career and graduate school information. The department provides a full range of health science advising, and coordinates applications of students applying to medical, dental, and other health professional programs. Four faculty members serve each year as graduate advisers, and one faculty member serves as graduate adviser in the interdepartmental program in biochemistry and molecular biology. The graduate secretary assists graduate students in all matters related to their graduate study. Department publications are available from the undergraduate and the graduate secretaries.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Biological Sciences

Students are normally expected to complete all lower-division course requirements by the end of their sophomore year, but physics may be delayed until the junior year if necessary. Students with good high school backgrounds are urged to complete their basic preparation in mathematics during their freshman year. Students with weak mathematics preparation should make up this deficiency by completing intermediate algebra and trigonometry by correspondence through University Extension, preferably during the summer preceding enrollment at UCSB, or by completing Mathematics 1 or 1S and/or 15 or 15S at UCSB as necessary. As the requirements suggest, each major in the departments is designed to emphasize a different area in biology.

Upper-division biology courses offered on the P/NP basis only and Biology 198 and 199 courses offered on the optional grading basis may be taken P/NP for major credit to a maximum of four units total in any combination, with the following exception: Biology 191 will not count toward major credit. All other courses for the major, both preparation and upper-division, must be taken for letter grades.

Aquatic Biology Major

The aquatic biology major provides students with interests in marine biology, biological oceanography, limnology, marine and freshwater ecology, and population biology of aquatic organisms with an opportunity to gain a general background in this subject area. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 6A-B; and either 8A-B or 130A-B-C; Physics 6A-AL-B-BL-C-CL; one of the following Mathematics options: (1) 3A-B-C; (2) 7A-B-C; (3) 34A-B and either P/STAT 33 or Biology 30 or 146A.

Upper-division major. Forty-two upper-division units in biological sciences, including (1) at least one course or course sequence from each of the following categories:

- A. Genetics: Biology 130A-B
- B. Development or Biochemistry: Zoology 100-100L; Biology 118
- C. Ecology: Biology 120
- D. Physiology: Biology 100; Botany 120-120L; Zoology 143-143L;

and (2) Biology 145A-B-C; and (3) at least two courses from the following list: Biology 142, 147, 148, 149, 151, 153, 154, 185 (only four units of Biology 185 can be used toward the upper-division requirements); Botany 170, 171; Zoology 105, 111, 112A, 112B, 143-143L, 161. (Note:

Zoology 143-143L cannot fill both this requirement and the physiology requirement above simultaneously); additional upper-division biological sciences courses to bring total units to 42.

Recommended courses: Chemistry 113A-B-C and 150-150L; Biology 104, 136B; and a course in physical geology.

Biochemistry-Molecular Biology Major

This major is designed for students interested in the characteristics of the molecules and the molecular mechanisms involved in living systems. It is especially recommended for those planning graduate work in biochemistry, molecular biology, or microbiology. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 130A-B-C and 6A-B-C; Mathematics 7A-B-C or 3A-B-C; followed by a fourth quarter of mathematics (differential equations recommended); Physics 6A-AL-B-BL-C-CL.

Upper-division major. Thirty-eight upper-division units, including Biology 130A-B, 108A-B-C, and 109L, Chemistry 113A-B-C, plus one additional upper-division course in biological sciences to bring total units to 38.

Biological Sciences Major

This major provides students with flexibility in curriculum planning. Biological sciences majors are required to consult with faculty advisers to assure planning a program that meets their chosen goals. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 6A-B and either 8A-B or 130A-B-C; Mathematics 3A-B-C or 7A-B-C or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL.

Upper-division major. A minimum of 38 upper-division units in biology, botany, and zoology, including at least one course or course sequence from Area A and from Area B, and one course or course sequence from two of Areas C, D, and E.

- | | |
|---------|---|
| Area A. | Genetics: Biology 130A-B |
| Area B. | Physiology: Biology 100; Botany 120-120L; Zoology 143-143L |
| Area C. | Development: Biology 144; Botany 171; Zoology 100-100L |
| Area D. | Ecology: Biology 120, 145B, 145C; Botany 140-140L, 141, 142; Zoology 113A-AL, 139 |
| Area E. | Diversity of Form and Structure: Biology 104, 122, 131, 141, 142, 143, 145B, 147, 153, 154, 161, 173; Botany 103A-B, 110, 111, 151, 170; Zoology 105, 108, 111, 112A, 112B, 125, 130, 161 |

Botany Major

The botany major is primarily designed to provide an understanding of plant structure and development, diversity, evolutionary relationships, functional systems, and environmental relationships. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 6A-B and either 8A-B or 130A-B-C; Mathematics 3A-

B-C or 7A-B-C or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Thirty-eight upper-division units, including Biology 130A-B, Botany 103A-B, 110 or 111 or 170, 113, 120-120L, 140-140L or 141 or 142. The remaining three to five upper-division units, to bring total units to 38, should be chosen in consultation with the faculty adviser. Biology 104, 130C, 137, Zoology 125 are strongly recommended. Other recommended subjects include animal diversity, aquatic biology, biochemistry, biometry, geography, geology, mycology, and plant taxonomy.

An unofficial specialization in aquatic botany is possible within the botany major by choosing Botany 170, 171, and Biology 145A-AL as electives.

Ecology and Evolution Major

This major provides a solid foundation in the study of interactions among organisms, and of their relations to the environment. Following completion of the core sequence, students may elect either an ecology or evolution concentration, or may devise their own program in consultation with a faculty adviser. This is the appropriate major for the field-oriented biologist and for students interested in graduate work in plant or animal population biology, ecology, or evolutionary biology. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; Mathematics 3A-B-C and one of the following: P/STAT 33 or Biology 30 or Biology 146A; or 7A-B-C and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL. Note: Organic chemistry is prerequisite to some, but not all of the courses in the physiology requirement below.

Upper-division major. Forty-two upper-division units including the core sequence Biology 130A-B, Biology 131, Botany 142, Biology 120, and at least one course or course sequence from each of the following categories:

- (1) Physiology: Biology 100; Botany 120-120L, 141; Zoology 143-143L;
- (2) Animal Diversity and Systematics: Zoology 105, 108, 111, 112A, 112B, 113A-AL, 125, 130, 161;
- (3) Plant Diversity and Systematics: Biology 173; Botany 103A, 111;
- (4) Physical Environment: Biology 145A; Geography 110; Geology 101, 105;

and additional upper-division biological sciences electives to bring the upper-division major total to 42.

Environmental Biology Major

This major is designed to provide the student with an understanding of the relationships of plants and animals with their physical environment and with each other at the individual, population, species, or community level. The location of the campus provides an unusual variety of habitats in which to work. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 6A-B and either 8A-B or 130A-B-C; Mathematics 3A-B-C and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL. Additional units from climatology, physical

geography, plant geography, geology, paleontology, oceanography, and statistics, either lower- or upper-division, are strongly recommended and should be chosen in consultation with the adviser.

Upper-division major. Thirty-eight upper-division units in the biological sciences, including Botany 103A (103B strongly recommended); Zoology 113A-AL and 125; plus an additional 25 units in biological sciences including at least eight units from botany and four from zoology, and at least one course or course sequence from each of the four categories listed below. The courses selected from these categories will complete the common requirements for all majors:

- A. Genetics: Biology 130A-B
- B. Physiology: Biology 100; Botany 120-120L, 141*; Zoology 143-143L,
- C. Ecology: Biology 120, 120AL-BL; Botany 140-140L, 141*, 142
- D. Natural History and Systematics: Biology 173; Botany 103B, 146, 147, 151, 170; Zoology 105, 111, 112A, 112B, 126, 130, 138, 161

*Botany 141 cannot be used to fulfill physiology and ecology requirements simultaneously.

Microbiology Major

Microbiology has been and continues to be at the forefront in contributing to human welfare and to our understanding of the basic mechanisms of life processes. Three concentrations in microbiology are available:

General microbiology will provide the student with a broad knowledge of both procaryotic and eucaryotic microorganisms. Such a background will form the basis for understanding the relationships between the various groups of microorganisms and their environment and the relationship of those microorganisms to human welfare. This program will stress the contribution of microbiology to our understanding of basic life processes, and will provide a background for careers in food, industrial, marine, and pharmacological microbiology, and for graduate work in microbiology.

Biomedical sciences, in addition to providing a basic training in microbiology, will also provide a specialized background for students whose careers lie in the fields of medical technology, medicine, dentistry, or nursing, and for those who wish to pursue graduate work in medical or clinical microbiology.

Genetic engineering, in addition to providing a basic training in microbiology, will provide specialized training in the methodology of recombinant DNA research. This area of research is paving the way for a fundamental understanding of the nature of the eucaryotic gene and its regulation. It is also ushering in a revolution in the pharmaceutical industry in the production of hormones and other biologically useful agents. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; Chemistry 6A-B and 8A-B-C or 130A-B-C; Math 3A-B-C or 7A-B-C or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Thirty-nine to forty-four upper-division units are required, including Biology 130A-B, 104, 128-128L, 118 (Note: Biology 108A-B-C may be substituted for Biology 118 and is strongly recommended for the genetic engineering concentration), Biology 122, 123

(123L strongly recommended), 140 (140L strongly recommended), plus the following requirements for concentration in one of the following areas:

- A. General Microbiology: Biology 173, Botany 170
- B. Biomedical Sciences: Biology 111 or Zoology 111 and Biology 129
- C. Genetic Engineering: Biology 132

The concentration will not be formally acknowledged on official transcripts or diplomas. The following courses are recommended: Biology 110C, 123L, 140L; Chemistry 113A-B-C, 150-150L.

Pharmacology Major

The emphasis in this major is on pharmacology as a basic science, rather than on the therapeutic principles of pharmacology. The curriculum content is designed to prepare students for careers in pharmaceutical research-and-development laboratories; the program also provides a strong background for graduate study in pharmacology. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 6A-B and 130A-B-C; Mathematics 3A-B-C or 7A-B-C or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL.

Upper-division major. At least 47 upper-division units, including Biology 130A-B, 100, 108A-B-C, 109L, 110A-B-C, 110BL-CL. The following courses are recommended: Chemistry 150-150L; Biology 104, 105, 128, 140, 146A-B; Zoology 108, 155.

Physiology and Cell Biology Major

In this major, physiology is considered in the context of those aspects of cell biology that relate to an understanding of the integrated function of organ systems in whole organisms. Two concentrations, sharing a common core of preparative courses, have been designed. In consultation with a faculty adviser, students decide which of the alternative courses they should take in those categories identified below as "by consultation." Completion of the concentration will not be formally acknowledged on official transcripts or diplomas. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; Chemistry 6A-B and 8A-B-C (or 130A-B-C by consultation), Mathematics 3A-B-C or 7A-B-C, or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Forty-two upper-division biological sciences units, including Biology 100, Biology 130A-B, Biology 137, and Biology 108A-B and 109L plus the following requirements in either the physiology or the cell biology concentration.

PHYSIOLOGY CONCENTRATION

Biology 105; Zoology 154; at least one course in endocrinology (Zoology 155, 156, or Biology 110B, [by consultation]); and at least one of the following: Biology 101, 106; Zoology 143-143L, 160; Botany 120-120L.

CELL BIOLOGY CONCENTRATION

At least one course in physiology (Biology 105; Botany 120-120L; Zoology 154, 155, 156); at least one course in either developmental biology or immunology (Biology 123-123L; Zoology 100-100L); at least one of the following: Biology 101, 111, 128-128L, 132, 139, 147, 173; Zoology 160. Recommended courses: Biology 104, 109L, 110A-C, 110CL, 128-128L, 140-140L, 151, 161; Botany 113, 120L; Zoology 100L, 108, 112A, 112B; Psychology 133A-B, 137.

Zoology Major

The zoology major is designed to provide an understanding of animal structure and diversity, evolutionary relationships, functional systems, and environmental relationships, with an option of specialization in either organismal or population biology. Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C; 6A-B and either 8A-B or 130A-B-C; Mathematics 3A-B-C or 7A-B-C or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL.

Upper-division major. Thirty-eight upper-division units in biological sciences, including at least one course or course sequence from Areas A and B, one from either Area C or Area D, and one each from the two subsections of Area E below.

- Area A. Genetics: Biology 130A-B
- Area B. Physiology: Biology 100, Zoology 143-143L
- Area C. Development: Biology 144; Zoology 100-100L
- Area D. Ecology: Zoology 113A-AL, Biology 120, 131
- Area E. Diversity and Systematics: (1) at least one course dealing with invertebrates, chosen from Zoology 111, 112A, 112B, 125; (2) at least one course dealing with vertebrates, chosen from Zoology 105, 108, 130, 161

The remaining units to bring the total to 38 should be determined in consultation with a faculty adviser.

Bachelor of Science—Pharmacology

Please note that dashes indicate that an entire sequence must be completed as shown in order to fulfill an area requirement.

Preparation for the major. Biology 11A-B-C (transfer students must consult their adviser regarding appropriate portions of Biology 11Z); Chemistry 1A-AL-B-BL-C-CL or 2A-B-C, 130A-B-C, 6A-B-C; Mathematics 3A-B-C, or 7A-B-C, or 34A-B and one of the following: P/STAT 33 or Biology 30 or Biology 146A; Physics 6A-AL-B-BL-C-CL. Please note: General Education requirements for the B.S. degree are different from those for the B.A. degree. See the introductory portion of this chapter for details.

Upper-division major. Fifty-five upper-division biological sciences units are required, as follows: Introduction to Physiology (Biology 100); Introductory Genetics (Biology 130A); General Genetics (Biology 130B); Neurobiology (Biology 105); Vertebrate Physiology (Zoology 154); Pharmacology (Biology 110A-B-C-BL-CL); Biochemistry (Biology 108A-B-C, 109L); Pharmacology Colloquia (Biology 169).

Suggested electives include Population Genetics (Biology 130C); Microbiology (Biology 104,

128); Basic Immunology (Biology 123); Vertebrate Evolutionary Morphology (Zoology 108); Analytical Chemistry (Chemistry 150-150L); Design of Experiments (P/STAT 122); Electronics for Science Students (Physics 127A-B).

Upper-division biology courses offered on the P/NP basis only and Biology 198 and 199 courses offered on the optional grading basis may be taken P/NP for major credit to a maximum of four units total in any combination, with the following exception: Biology 191 will not count toward major credit. All other courses for the major, both preparation and upper-division, must be taken for letter grades

Senior Honors Program

Students with outstanding academic records in biological sciences are encouraged to apply for the senior honors program early in the fall quarter of the senior year. The honors program centers on an independent research project carried out in one of the departmental research groups (Biology 199), and the preparation of a written report or thesis. Eligibility requirements and applications are available from the undergraduate adviser.

GRADUATE PROGRAM

Graduate study in the Department of Biological Sciences is organized into four sections: (1) Aquatic and Population Biology; (2) Biochemistry-Molecular Biology; (3) Environmental and Evolutionary Biology; and (4) Physiology and Cell Biology.

Admission

All applicants must fulfill the general requirements for admission to graduate status. In addition, foreign students are required to obtain a minimum score of 550 on the Test of English as a Foreign Language (TOEFL) prior to admission. The Graduate Record Examination is required of all applicants.

A candidate for the master's degree must fulfill, in addition to general university requirements, the minimum lower- and upper-division requirements or their equivalents for the major in their field of emphasis. Students admitted with deficiencies will normally be allowed to rectify them early in their graduate studies.

Prospective candidates for the degree of Doctor of Philosophy in biology must normally have the bachelor's degree in one of the biological sciences, with a preparation deemed equivalent to that required for the bachelor's degree from UCSB. Students who are admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses.

All doctoral candidates must qualify for and hold a teaching assistantship for the equivalent of three quarters as part of the preparation for the Ph.D. degree. A reading knowledge of one foreign language, appropriate to the student's field of interest, is required. Each prospective candidate must take a qualifying examination administered by the department. Each candidate must complete a doctoral dissertation under the general supervision of a committee and must take a final oral examination. With the approval of the candidate's doctoral committee, the final oral examination may be waived in lieu of a scheduled departmental seminar.

University and regents' fellowships, teaching assistantships, and research assistantships are available for a limited number of qualified candidates. A few qualified applicants may be awarded a waiver to cover out-of-state tuition fees. It is the current policy of the department to limit out-of-state tuition waivers to 3 quarters.

Applications for the above merit-based financial support must be submitted by January 31.

Emphasis in Aquatic and Population Biology

Requirements for the M.A. Two plans are available. Under Plan 1, thesis plan, a minimum of 30 quarter-units in courses in the major subject and a thesis are required. The units may be taken in graduate or upper-division courses; at least 12 must be in the 200 and 500 series in the major subject, excluding 597 and 598, with a maximum of 6 units in 596. Courses outside the major may be substituted upon written approval of the student's advisory committee. Under Plan 2, comprehensive examination plan, a minimum of 36 quarter-units in courses in the major subject, (of which at least 18 units must be in the 200 and 500 series, excluding 597 and 598, with a maximum of 9 units in 596) and satisfactory performance in a comprehensive final examination are required. Courses outside the major may be substituted upon written approval of the student's advisory committee. The comprehensive examination will cover a major and a minor area of emphasis. The major emphasis must be selected from the list presented below for the Ph.D. program, the minor area may be selected from this list or, with the approval of the section graduate adviser, from another appropriate discipline.

Requirements for the Ph.D. Following is a list of specialized areas of graduate study in aquatic and population biology. Each student is expected to select one of these areas as a major field of study. A minor area of study may be selected from this list, or, with the approval of the graduate committee, from another discipline in the university.

1. Biological Oceanography and Limnology
2. Marine and Freshwater Zooplankton
3. Parasitology
4. Population Ecology
5. Algal Physiology
6. Algal Ecology and Systematics
7. Mathematical Biology
8. Ecological Physiology of Crustaceans and Fishes
9. Paleoecology
10. Evolutionary Ecology
11. Biology of Deep-Sea Animals
12. Stream Ecology
13. Aquatic Microbiology
14. Invertebrate Biology
15. Neurobiology
16. Bioluminescence
17. Marine Pharmacology

Emphasis in Biochemistry-Molecular Biology

Requirements for the M.A. Two plans are available. Under Plan 1, thesis plan, a minimum of 30 quarter-units and a thesis are required. The units may be taken in graduate or upper-division courses in the major subject; at least 12 units will normally be in the 200 and 500 series, excluding 597 and 598; of these, at least 9 graduate units in the 200 series nonseminar courses must be taken. Courses outside the major may be substituted upon written approval of the section graduate adviser. No unit credit is allowed for the thesis.

Under Plan 2, comprehensive examination plan, a minimum of 36 units of upper-division and graduate courses in the major subject, of which at least 18 units will normally be in the 200 and 500 series, excluding 597 and 598, are required. At least nine of the 200 series graduate units must be in courses that are not seminars. Courses outside the major may be substituted upon written approval by the section graduate adviser. Satisfactory performance is also required in a comprehensive examination which

will cover one specialized area from each of two area groups listed below for the Ph.D. program.

Requirements for the Ph.D. Students must pass two qualifying examinations, each consisting of a written research proposition followed by an oral defense of the proposition. The examinations are to be taken at the beginning of the second and third year of graduate study. Topics are to be selected from the following groups; at least two groups must be represented.

- Group A: (1) Physical Chemistry of Macromolecules
(2) Nucleic Acids
(3) Proteins
Group B: (4) Microbiology
(5) Virology
(6) Biology of the Eucaryotic Cell
Group C: (7) Molecular and Cellular Genetics and Regulation
(8) Developmental Biology

In addition, students must (1) register for Biology 260 and 262 every quarter; (2) take two seminars of the Biology 595 series per year until admission to candidacy; and (3) take at least one upper-division course or graduate course, during the first year of residency if possible, in each of the eight groups listed above.

Emphasis in Environmental and Evolutionary Biology

Requirements for the M.A. Students may select biology, botany, or zoology as their major field. The major emphasis must be selected from the list of specialized areas presented below under "Requirements for the Ph.D.," but the minor emphasis may be selected from this list or from appropriate disciplines in other sections or departments. Two plans of study are available for the M.A. Under Plan 1, thesis plan, a minimum of 30 quarter-units and a thesis are required. The units may be taken in graduate or upper-division courses in the major subject; at least 12 units must be in the 200 and 500 series, excluding 597 and 598, with a maximum of 6 units in 596. Courses outside the major may be substituted upon written approval of the student's advisory committee. No unit credit is allowed for the thesis.

Under Plan 2, comprehensive examination plan, a minimum of 36 units of upper-division and graduate courses in the major subject are required, at least 18 of which must be in the 200 and 500 series, excluding 597 and 598, with a maximum of 9 units in 596. Courses outside the major may be substituted upon written approval of the student's advisory committee. The comprehensive examination will cover a major and a minor area of emphasis. The major area must be selected from the list below; the minor emphasis may be selected from this list, or, with written approval of the committee, from appropriate disciplines in other sections or departments.

Requirements for the Ph.D. Students will select, with the approval of the advisory committee, a major and two minor areas of emphasis. The major emphasis must be selected from the list below; the minor emphases may be selected from the list, or from appropriate disciplines in other sections or departments. The oral qualifying examination for the Ph.D. degree must be taken before the end of the seventh quarter following matriculation in the Graduate Division.

1. Biology of Arthropods
2. Biogeography
3. Community Plant Ecology
4. Ecosystem Ecology
5. Ichthyology
6. Macroevolution
7. Plant Physiology
8. Plant Systematics and Evolution (Biochemical Systematics, Biosystematics, Taxonomy)

9. Physiological Plant Ecology
10. Theoretical Ecology
11. Vascular Plant Anatomy
12. Vertebrate Behavior and Ecology
13. Vertebrate Evolution, Morphology, and Systematics
14. Population Genetics

Emphasis in Physiology and Cell Biology

Requirements for the M.A. Two plans are available. Under Plan 1, thesis plan, a minimum of 30 quarter-units and a thesis are required. The units may be taken in graduate or upper-division courses in the major subject, and at least 12 must be in the 200 and 500 series, excluding 597 and 598, with a maximum of 6 units in 596. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Under Plan 2, comprehensive examination plan, a minimum of 36 units of upper-division and graduate courses in the major subject are required, of which at least 18 units must be in the 200 and 500 series, excluding 597 and 598, with a maximum of 9 units in 596. Courses outside the major may be substituted upon written approval by the advisory committee. Satisfactory performance in a comprehensive final examination is required. The examination will cover three of the specialized areas of graduate study listed below in the Ph.D. program.

Requirements for the Ph.D. The student will choose one of the areas listed below as a major field of study. Two minor areas of study may be selected either from the areas listed above or from some area outside the section of physiology and cell biology. Courses approved by the student's committee will be distributed in the major and minor areas of specialization.

1. Cell Physiology
2. Development
3. Comparative Physiology
4. Endocrinology
5. Neurobiology
6. Plant Physiology
7. Cell Structure and Function
8. Pharmacology

Interdepartmental Program of Graduate Studies in Biochemistry and Molecular Biology

For details see catalog entry under Biochemistry and Molecular Biology.

BIOLOGY COURSES

LOWER DIVISION

4FS. Special Topics in Molecular Biology

(2) Taborsky

Prerequisites: courses in high school chemistry and biology. Freshman seminar, 2 hours.

Exploration of the molecular basis of selected characteristics of living systems. Biological order, specificity, and continuity will be considered in terms of molecular descriptions of cells and cellular processes. (F; not offered 1987-88.)

5FS. Viral Etiology of Human Diseases

(2) Samuel

Freshman seminar, 2 hours.

An introduction to the principles and methodologies of animal virology with emphasis on viruses which cause diseases in humans. (W; not offered 1987-88.)

Please note: Biology 11A is restricted to sophomores or above with the prerequisites of Chemistry 1A-B-C. Freshman should start the introductory biology series with Biology 11B.

11A. Introductory Biology

(5) Staff

Prerequisites: Chemistry 1A-B-C. Lecture, 4 hours; laboratory, 3 hours.

Introduction to cell structure, metabolism, and cell and organismal physiology. (F)

11B. Introductory Biology

(5) Staff

Open to freshmen. Lecture, 4 hours; laboratory, 3 hours.

Introduction to genetics, developmental biology, ecology, and evolution. (W)

11C. Introductory Biology

(5) Staff

Prerequisite: Biology 11B recommended.

Lecture, 4 hours; laboratory, 3 hours.

Introduction to the major groups of microbes, plants, and animals. (S)

11Z. Introductory Biology for Transfer Students

(1-4) Staff

May be repeated for a maximum of 10 units.

Admission by departmental approval only.

Lecture, 1-4 hours; laboratory, 1-3 hours.

Selected topics in biology as appropriate to fulfill the introductory biology requirement at UCSB. (F,W,S)

20. Concepts of Biology

(4) Staff

Not open for credit toward graduation to students who have completed Botany 20 or Natural Science 1C. Not ordinarily open to majors in the Department of Biological Sciences for credit. Lecture, 3 hours; discussion, 1 hour.

Unifying principles of biology; cell structure, functions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. (F,W,S,SS)

22. Biological Basis of Disease

(4) Laris

Not ordinarily open to majors in the Department of Biological Sciences for credit.

Lecture, 3 hours; discussion, 1 hour.

Concepts of biology will be introduced through the study of several diseases. Topics discussed will include malnutrition, malaria and sickle cell anemia, cardiovascular problems, diabetes mellitus, bacterial and viral diseases, and cancer. (W; offered even numbered years.)

23. Human Development and Reproductive Physiology

(4) Triplett

Not ordinarily open to majors in the Department of Biological Sciences for credit.

Lecture, 3 hours; discussion, 1 hour.

Human development with emphasis on events occurring prior to parturition. Hormonal devices involved in human reproduction. Comments on senescence and carcinogenesis. (F)

24. Aquatic Ecology

(4) Cooper, Melack, Warner

Not open to majors in Biological Science.

Lecture, 3 hours; discussion, 1 hour.

Introduction to the ecology of plants and animals which live in aquatic environments, including a survey of marine and freshwater environments and the organisms which live in them, and stressing the interactions of the biota with their environments. Course will discuss the approaches that aquatic biologists use to answer ecological questions, and examine ecological principles

which have emerged from the study of aquatic communities. (F)

25. Marine Biology

(4) Neushul

Not ordinarily open to majors in the Department of Biological Sciences for credit. Lecture, 2 hours; laboratory, 4 hours.

An introduction to the unifying principles of biology, using marine plants and animals and their adaptations to life in the sea as examples of biological order and continuity. (W)

26. Human Heredity and Evolution

(4) Staff

Not open to majors in the Department of Biological Sciences. Lecture, 3 hours; discussion, 1 hour.

The basic principles and mechanisms of heredity and evolution, with special attention to their application to human affairs. (S; not offered 1987-88.)

30. Data Analysis

(4) Stewart-Oaten

Prerequisites: Mathematics 3A-B or equivalent. Lecture, 3 hours; laboratory, 3 hours.

Making sense of data: interpreting standard statistical reports and carrying out simple data analyses by hand and computer. Covers use and abuse; displaying data; Normal, t, Binomial and Poisson distributions; contingency tables; confidence intervals and tests for means; the role of assumptions; alternative viewpoints. (S)

91A. Biological Aspects of Health and Disease I

(2) Kohl and Staff

Seminar, 2 hours; discussion, 1 hour.

Investigation of biological issues of health and disease, a preventive measures, and the wellness concept. Current information and skills presented by health professionals, supplemented by assigned readings. Students required to demonstrate skills necessary to fulfill the role of patient educator. (F,W,S)

91B. Biological Aspects of Health and Disease II

(2) Kohl and Staff

Prerequisite: Biology 91A Seminar, 1 hour; laboratory, 2 hours.

Seminars will emphasize the delivery of health care information and elaborate upon related topics as initiated in the first part of the course. Laboratory is placement within selected student health services clinics as a patient educator. (F,W,S)

98. Readings in Biological Sciences

(1-3) Staff

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department. May be repeated for credit to a maximum of six units. No credit allowed toward the major.

Special readings on selected topics in biology. Individual conferences one hour every week. Designed to broaden the outlook and experience of advanced lower-division students. Hours and credit by arrangement with any member of the staff.

99. Introduction to Research

(1-3) Staff

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department. May be repeated for credit to a maximum of six units. No credit allowed toward the major.

Laboratory experience for advanced lower-division students. Hours and credit by arrangement with any member of the staff.



*Professor Anne Cushing shows students a 1959 book titled *Cortège*, by poet Pierre Le Cuire and illustrator Lansky. A gift of the UCSB Friends of the Library, the book is one of many examined in Cushing's course on collaborations between poets and painters in twentieth-century France.*

UPPER DIVISION

100. Introduction to Physiology

(5) Fisher, W.N. Holmes, Laris

Prerequisite: Biology 11A. Lecture, 4 hours; discussion, 1 hour.

Topics discussed will include the distribution of body fluids in the vertebrate organism, the transport properties of cell membranes, the biophysical properties of excitable cells, and the cellular and molecular bases of neural and endocrine control mechanisms. (F)

100L. Introduction to Physiology Laboratory

(1) Fisher, W.N. Holmes, Laris

Prerequisite: Biology 100 or concurrent enrollment. Laboratory, 3 hours.

Laboratory exercises in transport across cell membranes, the properties of excitable cells, and neural and endocrine control mechanisms. (F; not offered 1987-88.)

101. General Physiology

(3) Gibor

Prerequisites: Biology 11A-B-C (or equivalent) and organic chemistry with laboratory. Lecture, 3 hours.

Chemical and physical principles which govern some properties of living matter and its interaction with the environment. (F)

102. Membrane Transport and Receptor Mechanisms

(3) Laris

Prerequisite: Biology 100, 108A, or consent of instructor. This course is offered concurrently with Biology 206 but will have clearly differentiated performance criteria and goals. Lecture, 3 hours.

A review of transport and receptor mechanisms in biological membranes. (S; offered odd-numbered years.)

104. General Microbiology

(6) Lee

Prerequisites: Biology 11A-B-C; Chemistry 8A-B and 6A-B, or 130A-B-C and 6A-B. Lecture, 3 hours; laboratory, 6 hours; laboratory workshop, 3 hours.

An introduction to the biological properties of microorganisms; the historical foundations of the

field; a study of the major groups of microorganisms; their structure, cultivation, and pathogenicity. Laboratory experiments dealing with the isolation, cultivation, and enrichment of diverse microorganisms. (F)

105. Neurobiology I

(4) Case

Prerequisite: Biology 100. Lecture, 3 hours; discussion, 1 hour.

Properties of the nervous system ranging from single cells to the whole organism, using examples from vertebrates and invertebrates studied in terms of morphology, physiology, and behavior. (W)

106. Neurobiology II

(4) Feinstein

Prerequisites: Biology 105 and consent of instructor. Lecture, 3 hours; discussion, 1 hour. Molecular and cellular neurobiology. This course will present our current understanding of the rapidly evolving field of molecular and cellular neurobiology, incorporating the most recent developments. Lecture and reading material will be derived largely from the primary literature. (S)

106L. Laboratory in Neurobiology

(3) Feinstein

Prerequisites: Biology 105 and concurrent enrollment in Biology 106 and consent of instructor. Laboratory, 6 hours.

Histological, electrophysiological, and behavioral experiments designed to demonstrate basic principles of neurobiology. Students will be expected to complete an independent project. (S; not offered 1987-88.)

108A. General Biochemistry

(4) Taborsky, Sears

Prerequisites: Chemistry 130A-B-C and 6A-B (or Chemistry 8A-B and 6A-B). Lecture, 3 hours; discussion, 1 hour.

Chemistry of proteins; enzymic catalysis; bioenergetics. An evening movie/slide presentation is an optional portion of this course; attendance is strongly recommended. (F)

108B. General Biochemistry

(4) Staff

Prerequisite: Biology 108A. Lecture, 3 hours; discussion, 1 hour.

Metabolism of biologically important compounds; metabolic control mechanisms. (W)

108C. General Biochemistry

(4) Carbon

Prerequisites: Biology 108A-B. Lecture, 3 hours; discussion, 1 hour.

Chemistry and metabolism of nucleic acids; biosynthesis of proteins; biochemical genetics. (S)

109L. Laboratory in Biochemistry

(4) Staff

Prerequisites: Biology 108A-B. (Biology 109L may be taken concurrently with Biology 108B.) Laboratory, 12 hours.

Laboratory techniques in biochemistry. (W,S)

110A. Basic Pharmacology

(4) Jacobs

Prerequisites: Biology 11A-B-C, Biology 100, Chemistry 1A-B-C, Chemistry 130A-B-C. Lecture, 3 hours; discussion, 1 hour.

Designed to provide the student with a comprehensive knowledge of the history and scope of pharmacology as a basic science. The principles of drug action and the relationship of pharmacology to physiology, chemistry, and biochemistry are emphasized. (F)

110B. Pharmacology of Hormones

(4) Collins

Prerequisites: Biology 11A-B-C, Biology 100, and Chemistry 130A-B-C. Lecture, 3 hours; discussion, 1 hour.

A consideration of the principles which govern the pharmacological use of hormones, hormone analogs, and antagonists. (W)

110BL. Pharmacology Laboratory I

(3) Jacobs

Prerequisite: Biology 110A. Laboratory, 8 hours; discussion, 1 hour.

Analysis of drug sites and mechanisms of action using isolated tissues, organs, and intact animal preparations. (W)

110C. Basic Pharmacology: Principles and Chemotherapy

(4) Wilson

Prerequisites: Biology 130A or Biology 108A and 108C (may be concurrent enrollment), or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Fundamental principles of pharmacology, drug-receptor theory, biochemical mechanisms of action of drugs. (S)

110CL. Hormone Pharmacology Laboratory

(3) Collins, Wilson

Prerequisites: Biology 110B and concurrent enrollment in Biology 110C. Discussion, 1 hour; laboratory, 8 hours.

An introduction into the assay procedures used to determine levels and evaluate the biological potency of hormones and hormone analogs in biological fluids and tissues. (S)

111. Introduction to Hematology

(3) Staff

Prerequisite: consent of instructor. Lecture, 2 hours; laboratory, 3 hours.

Theory and practice in recognition of cell types, counting of various cell types, hematocrits, and recognition of abnormal hemoglobin. (S)

114. Human Factors in Biological Research

(3) Wenner

Prerequisites: a college-level biology course and upper-division standing. This course will not count towards the 38 upper-division required units for any of the majors offered in biological sciences. Lecture, 3 hours.

Biological scientists conduct their research within certain strictures; they follow unwritten codes and rules which differ in various subdisciplines.

This course treats selected examples in biological research in terms of the philosophy, psychology, and politics of science. (S)

118. Principles of Biochemistry

(4) Taborsky

*Prerequisites: Chemistry 1A-B-C, Chemistry 8A-B and 6A-B or consent of the instructor.**Not for majors in biochemistry-molecular biology, pharmacology, or physiology-cell biology. Lecture, 3 hours; discussion, 1 hour.*

An introduction to molecular structures and mechanisms of living systems. (S)

120. Introduction to Ecology

(4) Holbrook, Murdoch

Prerequisites: Biology 11A-B-C. Lecture, 3 hours; discussion, 1 hour.

Major concepts in population and evolutionary ecology. Theoretical, experimental, and field studies pertaining to population growth and regulation, competition, predation, diversity, adaptation, and life history strategies. (F)

120AL-BL-CL. Field and Laboratory Studies in Ecology

(3-3-3) Connell

Prerequisites: Biology 120 (may be taken concurrently) or its equivalent, and consent of instructor. Both 120AL and 120BL must be taken; grades for both will be assigned upon successful completion of 120BL. (120CL may be taken separately, but prerequisites are Biology 120, Biology 120AL-BL or their equivalent, and consent of instructor.) No credit allowed if student received credit for Zoology 140AL-BL-CL prior to Winter 1985. Laboratory, 3 hours, field, 3 hours; individual projects, 3 hours.

Practical studies in ecology in both field and laboratory. Individual projects will be emphasized. (F,W,S)

122. General Animal Virology

(4) Samuel

Prerequisite: Biology 130A or consent of instructor. Biology 104 and 108A-B-C are recommended. Lecture, 3 hours; discussion, 1 hour.

An introduction to the biology of animal viruses with emphasis on the biochemical and biophysical properties of viruses; the mechanisms by which animal viruses replicate; the cellular effects of, and response to, viral infection; and selected aspects of medical virology. (S)

123. Molecular and Cellular Immunobiology

(4) Sears

Prerequisite: Biology 130A or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Introduction to, and evaluation of, the current concepts of immunology. Emphasis will be placed on immunoglobulin structure and function, cell-cell cooperation in the immune response, and the role of the major histocompatibility complex in regulating immune responsiveness. (W)

123L. Molecular and Cellular Immunobiology Lab

(2) Sears

Prerequisite: concurrent enrollment in, or completion of, Biology 123, or consent of instructor. Laboratory, 6 hours.

Introduction to modern laboratory methods in immunology; properties and characterization of immunoglobulins and immunoglobulin-secreting cells; introduction to hybridoma technology; characterization of effector and regulatory T cells using functional assays. (W)

124. Advanced Topics in Immunobiology

(1) Staff

Prerequisite: Biology 123 or consent of instructor. Seminar, 1 hour.

Weekly seminar presentations by students of selected topics in contemporary immunology of the students' choice. The course format will allow students an in-depth analysis of current advances in immunology and unresolved dilemma in our understanding of the immune system. (S; not offered 1987-88.)

126. Genetic Toxicology

(3) Staff

Prerequisites: Biology 130A-B. Lecture, 3 hours.

Discussion of mechanisms and methods of detecting radiation and chemically induced DNA damage, classes of genotoxic agents, effects of xenobiotic metabolism and DNA repair on dose-response relationship, risk/benefit analysis, government regulations, and legal and sociological implications of exposing human populations to genotoxic agents. (S; not offered 1987-88.)

128. Microbial Physiology and Genetics: Regulation of Gene Expression and Metabolism

(3) Englesberg

Prerequisites: Biology 130A; Biology 104 recommended but not required. Concurrent enrollment in Biology 128L required. Lecture, 3 hours.

By a study of the original literature we will trace the interplay of hypotheses and experiments in the development of our current concepts regarding gene expression and carbohydrate transport, and the interaction of these phenomena in the regulation of metabolism. This course is offered concurrently with Biology 228, but will have clearly differentiated performance criteria and goals. (W)

128L. Microbial Physiology and Genetics Laboratory: Regulation of Metabolism

(3) Englesberg

Prerequisite: concurrent enrollment in Biology 128 required. Laboratory, 6 hours; discussion, 1 hour.

An introduction to the experimental approach in the study of the regulation of gene expression and metabolism. This course is offered concurrently with Biology 228L, but will have clearly differentiated performance criteria and goals. (W)

129. Medical Microbiology

(3) Eardley

Prerequisite: Biology 104 or 128. Lecture, 3 hours.

The characteristics of bacteria, rickettsia, and viruses, both pathogenic and adventitious, are studied as they are associated with diseases of humans. (S)

129L. Medical Microbiology Laboratory

(2) Eardley

*Prerequisites: Biology 104 or 128; must be taken concurrently with Biology 129.**Laboratory, 6 hours.*The laboratory includes experiments with pathogenic bacteria such as *Staph aureus*, *Streptococcus pyogenes*, and *Nisseria gonorrhoeae*. The major focus of the course is for the student to develop skills and techniques to work with pathogenic microorganisms. (S)**130A. Introduction to Modern Genetics**

(4) Morse and Orias

Prerequisites: Biology 11A-B-C, Chemistry 1A-B-C. Lecture, 3 hours; discussion, 1 hour.

Introduction to the structure, function, evolution, and manipulation of the genetic material. Basic mechanisms of genetic evolution, DNA and RNA replication, mutation, modification, recombination, complementation, exchange, transcription,

translation, and their regulation, especially in prokaryotic organisms (bacteria, plasmids, and viruses). Uses of recombinant DNA technology in analyzing gene function, structure, and evolution. Application to medicine, agriculture, industry, and biological research. (F,W)

130B. General Genetics

(4) Endler, Christoffersen

Prerequisite: Biology 130A. Lecture, 3 hours; discussion, 1 hour.

Introduction to the transmission and expression of genetic material as it occurs in nucleate organisms from yeast to man. The genetic biology of eukaryotes is considered on the molecular, cellular, developmental, familial, and population levels, with emphasis on inferences drawn from experiments and observations. (W,S)

130C. Population Genetics

(4) Endler

Prerequisite: Biology 130B. Lecture, 3 hours; discussion, 1 hour.

The consequences of Mendelian principles in diploid populations, including quantitative genetics; genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics. (S)

130L. Genetics Laboratory

(2) Orias

Prerequisite: Biology 130A or consent of instructor. Laboratory, 6 hours.

An introduction to the experimental analysis of the mechanisms of heredity. (S; not offered 1987-88.)

131. Principles of Evolution

(4) Valentine and Sweet

Prerequisites: Biology 11A-B. Lecture, 3 hours; discussion, 1 hour.

A foundation course concerning the mechanisms of evolution at micro- and macroevolutionary levels, and interpretation of the resulting patterns of adaptation and organic diversity. (W)

132. Recombinant DNA Methods

(4) Lee

Prerequisites: Biology 104, 130A-B, 118 (or Biology 108A-B-C). Laboratory, 6 hours; discussion, 2 hours.

Basic techniques of molecular cloning: propagation and maintenance of bacteria and viruses, isolation of plasmid DNA, agarose/acrylamide gel electrophoresis, restriction endonucleases, transformation and transfection, analysis of recombinant clones, nucleic acid hybridization. (S)

137. Cell Biology

(4) Cronshaw

Prerequisites: Biology 11A-B-C. Lecture, 3 hours; discussion, 1 hour.

An introduction to the structure of the function of cell organelles: membranes, nucleus, mitochondria, chloroplasts, endoplasmic reticulum, golgi apparatus, lysosomes, microbodies, microtubules, cilia, centrioles, and microfilaments. (F)

139. Cell Structure and Function

(3) Cronshaw

Prerequisite: Biology 137. Lecture, 3 hours.

Advanced studies of the structure and function of subcellular components. (W)

140. Mammalian Cells in Culture

(3) Englesberg

Prerequisites: Biology 104, 128, 130A, or consent of instructor, and one quarter of biochemistry. Lecture, 3 hours.

It is virtually impossible to study mammalian cells in culture without coming to grips with the problem of malignancy. This course will cover the fundamental properties of the mammalian cell in

culture and the relationship of these properties to cancer. The following topics will be covered: the establishment of characterization of primary cell cultures and cell lines, nutritional requirements, factors affecting the growth of normal and malignant cells, genetics. This course is offered concurrently with Biology 241, but will have clearly differentiated performance criteria and goals. (F)

140L. Mammalian Cells in Culture Laboratory

(2) Englesberg

Prerequisites: concurrent enrollment in Biology 140 or previous enrollment and consent of instructor. Laboratory, 6 hours.

Individual projects designed to familiarize the student with the basic methodology of cell culture. This course is offered concurrently with Biology 241L, but will have clearly differentiated performance criteria and goals. (F)

141. Biology of the Marine-Land Interface

(4) Staff

Prerequisite: one year of general biology. Lecture, 2 periods; discussion, 1 period; laboratory, 6 hours.

Influence of physical factors on adaptations of shoreline organisms with emphasis on the arthropods. (SS)

142. Marine Microbiology

(3) Prezlin

Prerequisites: Biology 11A-B-C; Chemistry 1A-B-C; Biology 145A-B. Lecture, 3 hours. Offered spring, even-numbered years.

To examine biochemical/physiological activities of marine microorganisms that influence biological/chemical conditions in the ocean. Topics will include: sampling, cultivation, distribution in ecosystems, role in nutrient cycling, stimulating/inhibitory effects of metabolites, microbial disease and spoilage, and bioluminescence. (S)

144. Development of Marine Invertebrates

(5) Staff

Prerequisites: Biology 11A-B-C and Chemistry 1A-B-C. Lecture, 3 periods; laboratory, 6 periods.

Descriptive embryology of marine invertebrates. Causal mechanisms in the development of invertebrates. (S; offered odd-numbered years.)

145A. Ecological Processes in Aquatic Environments

(3) Melack, Prezlin

Prerequisites: Biology 11A-B-C. Lecture, 3 hours.

A discussion of the biological processes and physical and chemical characteristics of biological significance in freshwater and marine environments. Emphasis on primary productivity, nutrient dynamics, global cycles, and ecology of phytoplankton and bacteria. (F)

145AL. Chemical and Physical Methods of Aquatic Environments

(3) R. W. Holmes, Melack

Prerequisite: Biology 145A or concurrent enrollment. Laboratory, 9 hours.

A survey of physical and chemical methods used by limnologists and oceanographers, supplemented with field observations. (F)

145B. Ecological Processes in Aquatic Environments

(3) Alldredge, R.W. Holmes

Prerequisite: Biology 145A. Lecture, 3 hours.

A continuation of Biology 145A with an emphasis on secondary productivity, zooplankton ecology, ocean circulation, and biogeographic aspects of pelagic communities. (W)

145BL. Methods of Aquatic Biology

(2) Alldredge, Prezlin

Prerequisite: concurrent enrollment in or previous completion of Biology 145B. Laboratory, 6 hours.

Laboratory and field techniques used to measure various biological processes including productivity, and to sample, identify, enumerate, and culture marine organisms. (W)

145C. Aquatic Communities

(3) Warner

Prerequisites: Biology 145A-B; Biology 120 recommended. Lecture, 3 hours.

A survey of the patterns of distribution, diversity, and abundance of species in marine and freshwater communities, with an emphasis on the dynamic interactions which shape these patterns. Applied aspects: fisheries, mariculture. (S)

145CL. Methods of Aquatic Community Ecology

(3) Warner, Cooper

Prerequisite: concurrent enrollment in Biology 145C. Laboratory, 6 hours; discussion, 1 hour. Experience in the field techniques of aquatic community ecology. (S)

146A-B. Biometry

(4-4) Stewart-Oaten

Prerequisites: Mathematics 3A-B or equivalent. Students who have received credit for Biology 136A-B may not take this course for credit. Lecture, 3 hours; laboratory, 3 hours

A: Interpreting numerical evidence and finding things out. An advanced version of Biology 30, emphasizing applications, for students expecting to use statistical methods in their own research. Coverage: as in Biology 30 but more in-depth, and with regression and correlation added. (F)

B: Continuation of Biology 146A, but with more use of computer packages. Coverage: analysis of variance (1- and 2-way; fixed, random and mixed models); factorial designs; ANCOVA; non-parametric procedures; counted data; robustness, outliers and messy data; introduction to experimental design. (W,S)

147. Biology of Coral Reefs

(4) Trench

Prerequisites: Zoology 112 (or equivalent); Biology 145A-B. Lecture, 3 hours; laboratory, 3 hours.

An intensive discussion of coral reefs, including their paleontology, geomorphology and geochemistry, population biology, and physiology. (S)

148. Ecology of Running Waters

(3) Cooper

Prerequisite: Biology 145B. Lecture, 3 hours.

Review of literature on the physics, chemistry, and biology of running water ecosystems. (S; offered odd-numbered years.)

148L. Investigations in Stream Ecology

(2) Cooper

Prerequisite: Biology 145AL. Laboratory, 6 hours.

Introduction to field methods used in lotic ecology. Design and execution of research projects emphasized. (S; offered odd-numbered years.)

149. Mariculture: Research Frontiers in Farming the Sea

(3) Neushul, Ebeling, Morse

Prerequisite: upper-division standing in the Department of Biological Sciences. May be repeated to maximum of six units. Lecture, 3 hours.

Introduces basic biological principles involved in propagating marine plants/ animals, problems

faced in commercializing such efforts, and focus/results of contemporary research, particularly in area of modern biotechnology, aimed at improving control of reproduction, development, growth, utilization of cultivated species. (S)

151. Photosynthesis and Primary Productivity

(3) Prezelin

Prerequisites: Biology 11A-B-C; Chemistry 1A-B-C; Biology 145A-B. Lecture, 3 hours.

To introduce the process of photosynthesis and discuss the ecological/physiological aspects of determining primary production in aquatic systems. (S; offered odd-numbered years.)

153. Deep-Sea Biology

(3) Childress

Prerequisites: Biology 11A-B-C. Lecture, 3 hours; laboratory, 3 hours.

This course considers the biology of midwater and benthic organisms living beneath the euphotic zone. It emphasizes dynamic aspects of biological processes in this unique environment. Surveys of major deep-sea taxa and the history of deep-sea biology are included. (W; not offered 1987-88.)

154. Biological Limnology

(3) Cooper, Melack

Prerequisites: Biology 145A and 145B, or equivalent. Lecture, 2 hours; discussion, 1 hour.

Emphasis on plankton dynamics, biogeochemistry of watersheds, paleolimnology, and latitudinal comparisons between temperate and tropical lakes. (S; not offered 1987-88.)

154L. Biological Limnology Laboratory

(2) Melack, Cooper

Prerequisites: Biology 145AL-BL; concurrent enrollment in Biology 154. Laboratory, 6 hours. Laboratory and field techniques for measurement of plankton abundance, nutrient limitation, primary productivity, nutrient recycling, grazing, predator-prey, and competitive interactions; taxonomy of zooplankton and phytoplankton (S; not offered 1987-88)

159. Tropical Ecology

(3) Melack, Nadkarni

Prerequisite: introductory ecology (e.g., Biology 120, Biology 145C) Lecture, 3 hours

Examination of ecological processes in tropical terrestrial and aquatic environments with emphasis on forests, fishes, and lakes, and including deforestation, fisheries, and public health. (W; not offered 1987-88)

161. Size in Biology

(3) Sweet

Prerequisite: Zoology 108. Lecture, 2 hours; discussion, 1 hour

An examination of the role played by body size in morphology, physiology, and ecology, stressing the influence of the surface/volume disparity and variation in size on principles of structural and functional design (F; offered odd-numbered years)

169. Pharmacology Colloquia

(1) R Jacobs, Wilson

Prerequisites: Biology 11A-B-C or equivalent introductory biology course. 1-2 units may apply toward upper-division major requirements to a maximum of four units total in combination with courses numbered 185 or 192 through 199. Lecture, 1 hour.

Lectures on active research programs in pharmacology in the federal, state, and private research sectors (W,S)

173. Biology of Fungi

(4) Ross

Prerequisites: Biology 11A-B-C. Biology 130A (or concurrent enrollment) or consent of instructor. Lecture, 3 hours; laboratory, 3 hours. An introduction to the function, development, regulation, and genetic systems of fungi and the associations these organisms make with other forms of life, including man. Laboratory: a survey of the major forms and behavior patterns of fungi with practical instruction in isolation, cultivation, and identification of microfungi. (F)

177. Data Display

(3) Wenner

Prerequisite: upper-division standing; statistics recommended. Lecture, 3 hours.

A consideration of the various means by which experimental results are represented in journals, including an analysis of all types of graphs, tables, and figures. The validity of accompanying interpretation will also be examined. (F; offered even-numbered years.)

180. Ecological Theory

(3) Botkin

Prerequisites: basic course in ecology; knowledge of one computer language; mathematics through calculus or matrix algebra. May be repeated to a maximum of six units. Lecture, 2 hours; laboratory, 1 hour.

The lectures expose the student to fundamental issues underlying the development of ecological theory and to the content of some of that theory. The laboratory provides experience in the use of computer simulation in ecological theory. (W)

183. Life in the Biosphere

(3) Botkin

Prerequisites: Biology 11A-B-C, Chemistry 1A. Lecture, 3 hours.

Discussions of the earth as a living system, including: 1) a study of the impact of the biota on the cycling of essential chemical elements through the atmosphere, oceans, soils, and sediments of the earth; 2) a consideration of the influence of the biota on the earth's energy budget. (S; not offered 1987-88)

185. Fieldwork in Oceanography

(1-4) Prezelin

Prerequisites: upper-division courses in aquatic biology or geology, and consent of instructor. 1-4 units may apply toward upper-division major requirements to a maximum of four units total in combination with courses numbered 169 or 192 through 199.

Participation as a member of the scientific party on Scripps Institution (UCSD), NMFS, and UCSB oceanographic cruises. Cruise duration is variable (7 to 60 days), and course units will vary with cruise duration. Supervision by scientific party leader. Report required. (F,W,S,SS)

191. Introduction to Health Care Delivery

(2) Kohl

Prerequisites: upper-division standing; 3.0 grade-point average or consent of instructor. This course will not count towards 38 upper-division required units for any of the majors offered in biological sciences. Lecture, 1 hour; laboratory, 3 hours.

Course conducted at UCSB and Santa Barbara Medical Foundation Clinic will involve series of lectures by UCSB faculty and clinic physicians discussing health care delivery. Students will also spend three hours per week "on call" with medical or surgical specialist at clinic or hospital. (F,W,S)

192. Special Topics in Biological Sciences

(1-4) Staff

Prerequisites: upper-division standing in biology and consent of instructor. 1-4 units may apply toward upper-division major requirements to a maximum of four units total in combination with courses numbered 169, 185, or 193 through 199. May be repeated in satisfaction of unit requirements of student's departmental major but credit for repeated enrollment must be sought by petition. Lecture, 1 to 4 hours. Special topics of current importance in biological sciences. Course content will vary. Information may be obtained in department office.

193. Internship in Biological Sciences

(1-5) Staff

Prerequisites: upper-division standing, 2.5 grade-point average overall and in the major. Instructor and departmental approval required. One to four units may apply toward upper-division electives in biological sciences to a maximum of four units total in combination with courses numbered 169, 185, or 192 through 199.

Opportunity to obtain practical biological related research experience by working under faculty direction as an intern with local, state, federal, or private agencies. A written report will be submitted for evaluation.

194AA-ZZ. Group Studies for Advanced Students

(2) Staff

Prerequisites: upper-division standing and consent of instructor. May be repeated for maximum of eight units. 1-4 units may apply toward upper-division major requirements to a maximum of four units total in combination with courses numbered 169, 185, or 192 through 199. Enrollment limited.

Oral reports by students.

- A-B. **Biochemistry-Molecular Biology:** J. A. Carbon; D. D. Eardley; E. Englesberg; D. M. Kohl; N. Lee; D. Morse; E. Orlas; C. E. Samuel; D. Sears; G. Taborsky; E. L. Triplett; L. Wilson.
- C. **Systematics:** J. R. Haller; S. Sweet.
- D. **Plant Ecology:** B. Mahall.
- E. **Embryology:** D. M. Kohl; E. L. Triplett.
- F. **General Physiology:** P. C. Laris; A. Gibor.
- I. **Phycology:** M. Neushul.
- J. **Evolutionary and Behavioral Ecology of Vertebrates:** S. I. Rothstein.
- N. **Plant Physiology:** Staff.
- O. **Ecological Genetics Seminar:** J. Endler.
- Q. **Aquatic Biology:** R. W. Holmes; J. M. Melack; A. Alldredge; S. Cooper.
- R. **Neurophysiology:** J. F. Case.
- T. **Parasitology:** A. Kuris.
- U. **Biogeography:** J. R. Haller.
- V. **Mycology:** I. K. Ross.
- W. **Arthropod Biology:** A. Wenner.
- Y. **Plant Morphology:** M. Neushul.
- Z. **Ecological Physiology:** J. J. Childress.
- AA. **Evolutionary Ecology:** R. R. Warner.
- DD. **Endocrinology:** P. M. Collins.
- DS. **Molecular and Cellular Immunology:** D. Sears.
- EE. **Symbiosis:** R. Trench.
- FF. **Photosynthesis:** B. Prezelin.
- GG. **Evolutionary Morphology:** S. Sweet.

198. Readings in Biological Sciences

(1-5) Staff

Prerequisites: a major in biological sciences and consent of instructor and department. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade point average for the preceding three quarters; 3) have completed at least two upper-division courses in biological sciences. 1-4 units may apply toward upper-division major

requirements to a maximum of four units total in combination with courses numbered 169, 185, or 192 through 199. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Individual conferences one hour every two weeks. Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field. (F,W,S)

199. Independent Studies in the Biological Sciences

(1-5) Staff

Prerequisites: a major in biological sciences and consent of instructor and department. Students must 1) have attained upper-division standing; 2) have a 3.0 grade point average for the preceding three quarters; 3) have completed at least two upper-division courses in biological sciences. 1-4 units may apply toward upper-division major requirements to a maximum of four units total in combination with courses numbered 169, 185, or 192 through 198. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Hours and credit by arrangement with any member of the staff. Laboratory or field. (F,W,S)

GRADUATE COURSES

201. Progress in Physiology and Cell Biology

(1) Staff

Prerequisite: required of all graduate students in the section of physiology and cell biology. Lecture, 1 hour.

Presentation of recent progress in physiology and cell biology by guest speakers, advanced graduate students, and staff. (F,W)

203. Developmental Mechanisms

(2) Triplett, Christoffersen

Prerequisites: Biology 130A-B, Biology 108 or consent of instructor. Lecture, 2 hours.

Current concepts on mechanisms that control patterns of early development. (F; offered even-numbered years.)

204. Molecular Aspects of Cell Structure: The Cytoskeleton

(3) Wilson

Prerequisites: graduate standing; consent of instructor (qualified seniors may petition to enroll). Lecture, 3 hours.

Research-oriented course concerned with biochemical and molecular aspects of muscle, microtubules, and microfilaments. Functions, biochemical properties, and interactions of these macromolecular assemblies in cell motility, and in development and maintenance of cell shape will be discussed in depth. (F; offered odd-numbered years.)

206. Membrane Transport and Receptor Mechanisms

(3) Laris

Prerequisites: Biology 100, 108A, or consent of instructor. Lecture, 3 hours.

A review of transport and receptor mechanisms in biological membranes. Offered concurrently with Biology 102; however, graduate students will be given additional original research papers upon which they will be tested separately. (S; offered odd-numbered years.)

207. General Microbiology

(6) Lee

Prerequisites: Biology 11A-B-C; Chemistry 8A-B and 6A-B, or 130A-B-C and 6A-B. Lecture, 3 hours; laboratory, 6 hours; individual laboratory work, 3 hours.

An introduction to the biological properties of microorganisms; the historical foundations of the field; a study of the major groups of microorganisms, with emphasis on the bacteria and viruses; their structure, cultivation, and pathogenicity. Laboratory experiments dealing with the isolation, cultivation, and enrichment of diverse microorganisms. (F)

208. Neurobiology I

(4) Case

Prerequisite: Biology 11A. Lecture, 3 hours; discussion, 1 hour.

Properties of the nervous system ranging from single cells to the whole organism, using examples from vertebrates and invertebrates studied in terms of morphology, physiology, and behavior. This course is the same as Biology 105, but will have clearly differentiated goals and examinations. (W)

209. Neurobiology II

(4) Feinstein

Prerequisites: Biology 208 and consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Presents current understanding of rapidly evolving field of molecular and cellular neurobiology, incorporating most recent developments. Lecture/reading material derived largely from primary literature. Course is the same as Biology 106 but will have additional goals, reading material, and criteria. (S)

211. Ciliate Biology

(3) Orias

Prerequisite: consent of instructor. Lecture, 2 hours; seminar, 1 hour.

Conceptual bases for the experimental use of ciliates as models of eukaryotic cells in current frontiers of biology; nuclear differentiation, membrane bioelectrics, cell morphogenesis, and hormone action. An oral presentation of a paper in the recent literature will be required. (W; not offered 1987-88.)

212. Molecular Virology

(3) Samuel

Prerequisites: Biology 108A-B-C and 130A-B, or consent of instructor. Lecture, 3 hours.

Consideration of selected animal viruses in terms of structure, mechanism of genetic expression, and effects of viral gene expression on cell function, as well as aspects of the virus-host interaction including viral persistence, interference and interferon. (W; offered even numbered years.)

213. Biochemistry of the Nucleic Acids

(3) Carbon

Prerequisites: Biology 108A-B-C and organic chemistry or consent of the instructor. Lecture, 3 hours.

Nucleic acid structure and function, chemistry of nucleotides and polynucleotides, sequencing methods, biosynthesis, polymerases, and nucleases. (W)

214. Structure and Function of Proteins

(3) Taborsky

Prerequisite: completed undergraduate major in biochemistry, or its equivalent, or consent of instructor. Lecture, 3 hours.

General aspects of the structure of proteins; exploration of the structure-function relationship over a representative selection of functional types of proteins, polypeptides, and protein-containing supramolecular assemblies. (W; not offered 1987-88.)

216. Pharmacological Probes in Cell and Molecular Biology

(2) Wilson

Prerequisite: graduate standing. Open to selected seniors by consent of instructor. Lecture/seminar, 2 hours.

Lecture/seminar course concerned with drug-receptor interaction; primary emphasis being placed on the research application of drugs in the elucidation of biological processes. (F; offered even-numbered years.)

217. Toxins

(2) R. Jacobs

Prerequisite: graduate standing. Lecture, 2 hours.

This course covers in detail the pharmacological and toxicological properties of a variety of naturally occurring substances that have been isolated from marine and terrestrial organisms. The use of these substances to analyze physiological and biochemical processes is emphasized. (S; not offered 1987-88.)

220. Experimental Cytology and Electron Microscopy

(3) Cronshaw

Prerequisites: Biology 108A-B-C or consent of instructor. Lecture, 1 hour; laboratory, 6 hours.

An introduction to the techniques of structural cytology. (S)

221A-B-C. Techniques in Microscopy

(4-4-4) R.W. Holmes, Fisher

Prerequisite: This is a three-quarter course.

Grade will be assigned upon completion of Biology 221C. Lecture, 3 hours; laboratory, 6 hours.

An intensive laboratory course in sample preparation for, and the use of, light and electron microscopes. Topics will include tissue fixation, specific staining and histochemistry, radioautography, cells in suspension, macromolecules, brightfield, darkfield, phase contrast, and fluorescence microscopy. Transmission and scanning electron microscopy techniques will also be discussed. (F,W,S)

222. Molecular Biology of Tumor Viruses

(2) Samuel

Prerequisites: Biology 108A-B-C and 130A-B, or consent of instructor. Lecture, 2 hours.

Consideration of selected DNA and RNA tumor viruses in terms of structure, mechanisms of genetic expression, and effects of viral gene expression on cell function; the relationship of tumor viruses to cancer; and the role of tumor viruses in the study of cellular and molecular biology. (W; offered odd-numbered years; not offered 1987-88.)

223. Molecular and Cellular Immunobiology

(3) Eardley

Prerequisites: the following courses, or their equivalents, or consent of instructor: Biology 130A-B and Biology 108A-B-C. Lecture, 3 hours.

Introduction to, and evaluation of, the current concepts of immunology. Emphasis will be placed on immunoglobulin structure and function, cell-cell cooperation in the immune response, and the role of the major histocompatibility complex in regulating immune responsiveness. (F)

224. Advanced Topics in Immunobiology

(2) Sears

Prerequisite: concurrent enrollment in, or completion of, Biology 223; or consent of instructor. Lecture, 2 hours.

Contemporary developments and controversies regarding the biology of the immune system. (S; offered odd-numbered years.)

226. Genetic Regulation: Advanced Systems

(3) Staff

Prerequisites: Biology 130A or equivalent, and consent of instructor. Lecture, 3 hours.
Current status of advanced systems for the genetic dissection of mechanisms of gene regulation in the prokaryotes and their viruses will be discussed in lectures and seminars. (S)

227. Development and Molecular Biology of Slime Molds and Fungi

(3) Ross

Prerequisites: Biology 108A-B-C; 130A-B; and consent of instructor. Lecture, 2 hours; discussion, 1 hour.
Current concepts of the control mechanisms regulating cell interactions and differentiation in cellular and plasmodial slime molds and fungi. Emphasis will be on aspects of cell communication leading to sexual and somatic fusions and aggregations; the genetic and nuclear migration basis of sexual distinction will be explored. The techniques and methodology of experimentation on these organisms that has led to them being ideal model systems in modern biology will be discussed. An oral presentation of a research topic in the current literature will be required (W)

228. Microbial Physiology and Genetics: Regulation of Gene Expression and Metabolism

(3) Englesberg

Prerequisite: Biology 130A; Biology 207 is recommended but not required. Lecture, 3 hours

By a study of the original literature we will trace the interplay of hypotheses and experiments in the development of our current concepts regarding gene expression and carbohydrate transport, and the interaction of these phenomena in the regulation of metabolism. This course is offered concurrently with Biology 128, but will have clearly differentiated performance criteria and goals. (W)

228L. Microbial Physiology and Genetics Laboratory: Regulation of Gene Expression and Metabolism

(3) Englesberg

Prerequisite: concurrent or prior enrollment in Biology 228. Laboratory, 6 hours; discussion, 1 hour.

An introduction to the experimental approach in the study of the regulation of gene expression and metabolism. This course is offered concurrently with Biology 128L, but will have clearly differentiated performance criteria and goals. (W)

229. Genetic Toxicology

(3) Staff

Prerequisites: Biology 130A-B. Lecture, 3 hours.

Discussion of mechanisms and methods of detecting radiation and chemically induced DNA damage, classes of genotoxic agents, effects of xenobiotic metabolism and DNA repair on dose-response relationships, risk/benefit analysis, government regulations, and legal and sociological implications of exposing human populations to genotoxic agents. (S)

230C. Population Genetics

(4) Endler

Prerequisites: general genetics (Biology 130A and 130B or equivalent). Lecture, 3 hours; discussion, 1 hour.

The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, change under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetic. (S)

230L. Genetics Laboratory

(2) Orias

Prerequisite: Biology 130A or consent of instructor. Laboratory, 6 hours.
Experimental analysis of the mechanisms of heredity. (S; not offered 1987-88.)

235. Advanced Topics in Algology

(2) Gibor

Prerequisites: Botany 170, 171, or consent of instructor. Lecture, 2 hours.
The use of specialized algal species as model systems for research of basic biological problems. (W)

236. Biology of Cilia and Flagella

(2) Gibor

Prerequisites: cell biology, biochemistry. Lecture, 2 hours.
The development, structure, and function of cilia and flagella of unicellular and multicellular eukaryotic organisms will be considered. Emphasis will be on problems such as control and coordination, as well as origin and evolution of these organelles. (W, offered even-numbered years; not offered 1987-88)

241. Mammalian Cells in Culture

(3) Englesberg

Prerequisites: Biology 104, 128, 130A, or consent of instructor, plus 1 quarter of biochemistry. Lecture, 3 hours
Fundamental properties of mammalian cells in culture and the relationship of these properties to cancer. The establishment of characterization of primary cell cultures and cell lines, nutritional requirements, factors affecting the growth of normal and malignant cells, and genetics will be covered. Offered concurrently with Biology 128, but will have clearly differentiated performance criteria and goals. (F)

241L. Mammalian Cells in Culture Laboratory

(2) Englesberg

Prerequisites: Biology 241 or concurrent enrollment, and consent of instructor. Laboratory, 6 hours.
Individual projects designed to familiarize the student with the basic methodology of cell culture. This course is offered concurrently with Biology 140L, but will have clearly differentiated performance criteria and goals. (F)

245. Advanced Population Biology

(3) Murdoch

Prerequisites: an ecology course and consent of instructor. Lecture, 3 hours.
A course dealing in depth with a few selected aspects of population and community dynamics of organisms. Extensive reading of original papers. (S)

246A-B. Biometry

(4-4) Stewart-Oaten

Prerequisites: Mathematics 3A-B or equivalent. This course is the same as Biology 146A-B, but will have clearly differentiated goals and examinations. Not open to students who have completed Biology 237A-B for credit. Lecture, 3 hours; laboratory, 3 hours.
A: Interpreting numerical evidence and finding things out. Emphasizes applications for students expecting to use statistical methods in their own research with regression and correlation added. B: Continuation of Biology 246A, but with more use of computer packages. Coverage: analysis of variance (1- and 2-way; fixed, random, and mixed models); factorial designs; ANCOVA; non-parametric procedures; counted data; robustness, outliers and messy data; introduction to experimental design. (F,W)

247A. Mathematical Biology

(3) Stewart-Oaten

Prerequisite: consent of instructor. Lecture, 3 hours.
Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator systems, Markov processes, regression, and analysis of variance. (F)

247B. Mathematical Biology

(3) Stewart-Oaten

Prerequisite: consent of instructor. Lecture, 3 hours.
Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator systems, Markov processes, regression, and analysis of variance. (W)

248. Ecology of Running Waters

(3) Cooper

Prerequisites: Biology 145B, Zoology 121. Lecture, 3 hours.
Review of literature on the physics, chemistry, and biology of running water ecosystems. (S; offered odd-numbered years.)

248L. Investigations in Stream Ecology

(2) Cooper

Prerequisites: Biology 145AL, Zoology 122, and concurrent enrollment in Biology 148. Laboratory, 3 hours; field, 3 hours.
Introduction to field methods used in lotic ecology. Design and execution of research projects emphasized. (S; offered odd-numbered years.)

249. Mariculture: Research Frontiers in Farming the Sea

(3) Neushul, Ebeling, Morse

Prerequisite: upper-division or graduate standing in the Department of Biological Sciences. Lecture, 3 hours.
Introduce basic biological principles involved in propagating marine plants/animals, problems faced in commercializing such efforts, and focus/results of contemporary research, particularly in area of modern biotechnology, aimed at improving control of reproduction, development, growth, utilization of cultivated species. (S)

250. Photosynthesis and Primary Production

(3) Prezelin

Prerequisites: Biology 11A-B-C, Chemistry 1A-B-C. Lecture, 3 hours. Offered odd-numbered years.
To introduce the process of photosynthesis and discuss the ecological/physiological aspects of determining primary production in aquatic systems. (S; not offered 1987-88.)

252. Marine Microbiology

(3) Prezelin

Prerequisites: Biology 11A-B-C, 118, 145A-B-C, Chemistry 1A-B-C; or equivalent of these courses. Lecture, 3 hours.
To examine biochemical/physiological activities of marine microorganisms that influence biological/chemical conditions in the ocean. Topics will include: sampling, cultivation, distribution in ecosystems, role in nutrient cycling, stimulating/inhibitory effects of metabolites, microbial disease and spoilage, and bioluminescence. (S; offered even-numbered years.)

254. Biological Limnology

(3) Cooper, Melack

Prerequisites: Biology 145A and 145B, or equivalent. Lecture, 2 hours; discussion, 1 hour.

Emphasis on plankton dynamics, biogeochemistry of watersheds, paleolimnology, and comparisons between temperate and tropical lakes. (S; not offered 1987-88.)

254L. Biological Limnology Laboratory

(2) Melack, Cooper

Prerequisites: Biology 145AL-BL; Biology 254 or equivalent. Laboratory, 6 hours.

Laboratory and field techniques for measurement of plankton abundance, nutrient limitation, primary productivity, nutrient recycling, grazing, predatory-prey, and competitive interactions; taxonomy of zooplankton and hytoplankton. (S; not offered 1987-88.)

255A. Methods of Characterization of Biological Macromolecules

(3) Hooker

Prerequisites: biochemistry, calculus, physical chemistry, or the consent of instructor. Lecture, 2 hours; discussion, 1 hour.

Introduction to biophysical chemistry. Macromolecular structure and conformation, intermolecular interactions, and multiple equilibria. (Joint listing with the Department of Chemistry.) (F)

255B. Methods in the Characterization of Biological Macromolecules

(3) Staff

Prerequisite: Biology 255A. Lecture, 2 hours; discussion, 1 hour.

Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence and phosphorescence, NMR, ESR, EM, and x-ray diffraction. (Joint listing with the Department of Chemistry.) (W)

255C. Methods in the Characterization of Biological Macromolecules

(3) Staff

Prerequisites: Biology 255A-B or consent of instructor. Lecture, 2 hours; discussion, 1 hour.

The structure-function and physical properties of biological macromolecules with emphasis on hydrodynamic properties, including sedimentation diffusion, viscosity, osmotic pressure. (Joint listing with the Department of Chemistry.) (S)

256. Molecular Processes in Photosynthesis

(3) Prezelin

Prerequisite: general biochemistry or equivalent course. Lecture, 3 hours.

A lecture/seminar course to introduce graduate students to the molecular processes of photosynthesis, i.e., light energy absorption and transduction, photochemical charge separation, electron flow, photophosphorylation, and enzymatic fixation of inorganic carbon into organic compounds. (F; offered odd-numbered years; not offered 1987-88.)

257. Field Methods of Fresh Water Aquatic Ecology

(12) Staff

Prerequisites: upper-division limnology (or oceanography) with laboratory, and consent of instructor. Lecture, 4-5 hours; laboratory, 10 hours; field, 25 hours.

Basic skills to be developed are a) comparative physical and chemical limnology, b) measurement of primary and secondary standing stock and productivity, c) natural history, and d) field data analysis and interpretation. Streams and

lake ecosystems will be examined. Offered cooperatively with UC Davis faculty. Location: Sierra Nevada Aquatic Research Laboratory, Convent Creek, California. (SS - extra session)

258. Biology and Geology of Coral Reefs

(4) Trench

Prerequisites: Biology 11A-B-C, Zoology 112A. Lecture, 3 hours; laboratory, 3 hours.

An in-depth discussion of coral reefs, including their paleontology, geomorphology and geochemistry, population biology, and physiology. This course is offered concurrently with Biology 147, but will have clearly differentiated performance criteria and goals. (S)

259. Tropical Ecology

(3) Melack, Nadkarni

Prerequisite: an introductory ecology course. Lecture, 3 hours.

Examination of ecological processes in tropical terrestrial and aquatic environments with emphasis on forests, fishes, and lakes, and including deforestation, fisheries, and public health. This course will have clearly differentiated performance criteria and goals from Biology 159. (W; not offered 1987-88.)

260. Research Seminar in Biochemistry-Molecular Biology

(1) Staff

Prerequisite: graduate status. Joint listing with Department of Chemistry. Seminar, 1 hour.

Seminars on research in progress presented by faculty of the Department of Chemistry and the molecular biology-biochemistry section of the Department of Biological Sciences. Required attendance for graduate students in the interdepartmental major in biochemistry-molecular biology and for all graduate students majoring in biochemistry-molecular biology. (F,W,S)

261. Literature in Immunology

(1) Sears, Eardley

Prerequisite: consent of instructor. Lecture, 1 hour.

Critical reading and presentation of recent literature in immunology. (F,W,S)

262. Literature in Molecular Biology

(1) Staff

Prerequisite: consent of instructor. Discussion, 1 hour.

Critical reading and presentation of the current literature in molecular biology by staff, postdoctoral fellows, and graduate students. Required attendance for graduate students in biochemistry-molecular biology. (F,W,S)

264. Literature in Nucleic Acids

(1) Carbon, Orias

Prerequisite: graduate standing in biological sciences. Discussion, 1 hour.

Critical reading and presentation of the recent literature on nucleic acids by staff, postdoctoral fellows, and graduate students. (F,W,S)

265. Literature in Virology

(1) Samuel

Prerequisites: graduate status and consent of instructor. Seminar, 1 hour.

Critical reading and presentation of the recent literature on animal virus and host cells by graduate students, postdoctoral fellows, and staff. (F,W,S)

266. Literature in Developmental Neurobiology

(2) Fisher, Feinstein

Prerequisite: consent of instructor. Lecture, 2 hours.

Critical reading and presentation of the literature on development of the nervous system, with emphasis on structural and biochemical changes,

neuronal specification, and the development of behavior. (F,W,S)

267. Literature in Neurobiology

(2) Fisher and Case

Prerequisite: consent of instructor. Lecture, 2 hours.

Critical reading and presentation of the literature in various topics of neurobiology including structure, physiology, and behavior. (W)

269. Literature in Pharmacology

(1) Jacobs

Prerequisite: graduate standing in biological sciences. Lecture, 1 hour.

Critical reading and presentation of current literature in topics on pharmacology. (W,S)

270. Molecular Marine Biology

(2) Morse

Prerequisites: genetics and biochemistry, or consent of instructor. Lecture, 1 hour; seminar, 1 hour.

Explores recently successful, modern molecular biological, genetic and biochemical approaches to classical problems in marine biology, related biomedical research, and the identification, utilization, and protection of major marine biological resources. (S)

273. Biology of Fungi

(4) Ross

Prerequisites: Biology 11A-B-C, Biology 130A (or concurrent enrollment) or consent of instructor. Lecture 3 hours; laboratory, 3 hours.

An introduction to the function, development, regulation, and genetic systems of fungi and the associations these unique organisms make with other forms of life, including man. Laboratory: a survey of the major forms and behavior patterns of fungi with practical instruction in isolation, cultivation, and identification of microfungi. This course is offered concurrently with Biology 173, but will have clearly differentiated performance criteria and goals. (F)

277. Data Display

(3) Wenner

Prerequisite: biometry (Biology 136A-B) recommended. Lecture, 3 hours.

A consideration of the various means by which experimental results are represented in journals, including an analysis of all types of graphs, tables, and figures. The validity of accompanying interpretation will also be examined. (F; offered even-numbered years.)

280. Ecological Theory

(3) Botkin

Prerequisites: basic course in ecology; knowledge of computer language; mathematics through calculus or matrix algebra. Lecture 2 hours; laboratory, 1 hour.

Exposure to fundamental issues underlying the development of ecological theory and to the content of some of that theory. Laboratory provides experience in the use of computer simulation in ecological theory. (W)

285. Fieldwork in Oceanography

(1-8) Prezelin

Prerequisites: upper-division courses in aquatic biology and/or geology. Field, variable.

Participation as a member of the scientific party on Scripps Institution (UCSD), NMFS, and UCSB oceanographic cruises. Cruise duration is variable (7 to 60 days), and course units will vary with cruise duration. Supervision by scientific party leader. Report required. (F,W,S,SS)

292. Advanced Special Topics in Biological Sciences

(1-4) Staff

Prerequisites: graduate standing and consent of instructor. Course may be repeated, but credit for repeated enrollment must be sought by petition. Lecture, 1 to 4 hours.

Special topics of current importance in biological sciences. The content of this course will vary. Information on course content may be obtained in the office of the department.

500. Teaching Assistant Orientation

(1) Staff

Prerequisite: required of all teaching assistants. No unit credit allowed toward advanced degree. Workshop, 1 hour.

General orientation regarding the University of California and this campus (UCSB); various pertinent regulations, officials and their functions, staff and functions; services available to teaching assistants and to students. Prospective TA's are encouraged to take this course during the Fall quarter prior to their employment. (F)

501. Practicum in Instruction

(1-4) Staff

Prerequisite: concurrent teaching assistant employment. No unit credit allowed toward advanced degree.

Practical experience in teaching within specified areas of biochemistry, botany, microbiology, and zoology. Students will have responsibility for one or more laboratory and/or discussion sections. Staff will periodically observe teaching assistants in actual teaching situations. Evaluation forms will be completed by members of the class sections. (F,W,S)

502. Techniques of Teaching and Laboratory Class Supervision

(1-4) Staff

Prerequisite: concurrent employment as teaching assistant. Required of all teaching assistants. No unit credit allowed toward advanced degree.

An initial one-day orientation and workshop followed by weekly discussion. The orientation will concern departmental organization, staff and functions, services available to teaching assistants, and items of general information. (F,W,S)

503. Research Practicum in Biology

(1-2) Staff

No unit credit allowed toward advanced degree. Tutorial, 1 to 2 hours.

Basic procedures and methods of research in a specified area as determined by consultation between the supervising faculty member and the research assistant. Includes weekly meetings and consultations, and formal evaluations. (F,W,S)

595AA-ZZ. Group Studies

(2) Staff

Prerequisite: consent of instructor. Seminar, 2 hours.

A critical review of research in selected fields of biology. Subject matter for those seminars will be selected from the following list:

- A-B. **Biochemistry-Molecular Biology:** J. A. Carbon; D. D. Eardley; E. Englesberg; D. M. Kohl; N. Lee; D. Morse; E. Orias; C. E. Samuel; D. Sears; G. Taborsky; E. L. Triplett; L. Wilson.
- C. **Systematics:** J. R. Haller; S. Sweet.
- D. **Plant Ecology:** B. Mahall.
- E. **Embryology:** D. M. Kohl; E. L. Triplett.
- F. **General Physiology:** P. C. Laris; A. Gibor.
- G. **Virology:** C. E. Samuel.
- I. **Phycology:** M. Neushul.
- J. **Evolutionary and Behavioral Ecology of Vertebrates:** S. I. Rothstein.
- K. **Biometry:** A. Stewart-Oaten.

- L. **Cell Evolution and Development:** A. Gibor.
- N. **Plant Physiology:** Staff.
- O. **Ecological Genetics Seminar:** J. Endler.
- P. **Advanced Population Ecology:** J. H. Connell; W. W. Murdoch; A. Stewart-Oaten.
- Q. **Aquatic Biology:** R. W. Holmes; J. Melack; A. Alldredge; S. Cooper.
- R. **Neurophysiology:** J. F. Case.
- T. **Parasitology:** A. Kuris.
- U. **Biogeography:** J. R. Haller.
- V. **Mycology:** I. K. Ross.
- W. **Arthropod Biology:** A. Wenner.
- X. **Cell Biology:** J. Cronshaw.
- Y. **Plant Morphology:** M. Neushul.
- Z. **Ecological Physiology:** J. J. Childress.
- AA. **Evolutionary Ecology:** R. R. Warner.
- AE. **Ichthyology Seminar:** A. W. Ebeling; R. R. Warner.
- DD. **Endocrinology:** P. M. Collins.
- DS. **Molecular and Cellular Immunology:** D. W. Sears.
- EE. **Symbiosis:** R. Trench.
- FF. **Photosynthesis:** B. Prezelin.
- GG. **Evolutionary Morphology:** S. S. Sweet.
- LL. **Selected Topics on the Philosophy of Science:** A. Alldredge.
- MM. **Contemporary Topics in Biochemistry and Molecular Biology:** D. Sears.
- NN. **Literature in Eukaryotic Molecular Genetics:** E. Orias.

596. Directed Reading and Research

(2-12) Staff

Prerequisites: graduate standing and consent of instructor. May be repeated for credit up to half of graduate units required for the M.A. degree.

Hours and credit by arrangement with faculty. (F,W,S)

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff

Prerequisites: graduate standing and consent of instructor. No unit credit allowed toward advanced degree. Enrollment limited to 24 units per examination. Maximum of 12 units per quarter.

Individual study for M.A. comprehensive examinations and Ph.D. examinations.

598. Master's Thesis Research and Preparation

(1-2) Staff

Prerequisites: M.A. (thesis) candidate and consent of committee chair. No unit credit allowed toward advanced degree. Maximum of 12 units total.

For research underlying the thesis and writing of the thesis. (F,W,S)

599. Ph.D. Dissertation Preparation

(1-12) Staff

Prerequisites: Ph.D. candidate and consent of instructor. May be repeated for credit up to 12 units total.

For writing of the dissertation. (F,W,S)

BOTANY COURSES

LOWER DIVISION**20. General Botany**

(4) Staff

Not ordinarily open to majors in the Department of Biological Sciences for credit. Not open for credit toward graduation to

students who have completed Biology 20, 21, 23, 24, or Natural Science 1C. Lecture, 3 hours; demonstration laboratory/discussion, 2 hours.

Unifying principles of biology utilizing plants as exemplary material; correlation of structure and function; genetics, selection, and evolution; energy transformation; growth of populations and the relation of plants to man; conservation. (W,S)

UPPER DIVISION**103A. Flora and Vegetation of California**

(4) Haller

Prerequisite: introductory course in botany or biology, or Environmental Studies 13. Lecture, 2 hours; laboratory/field, 6 hours.

An introduction to plant families, species, and communities in California by means of laboratory work and field observations, and including techniques of plant collection and identification. One three-day field trip is required in addition to the regularly scheduled laboratories. (W)

103B. Vegetation and Flora of California

(4) Haller

Prerequisite: Botany 103A or equivalent. Lecture, 2 hours; laboratory/field, 6 hours.

A continuation of the material in Botany 103A, with increased emphasis on the composition and distribution of plant communities throughout California. Two field trips, three to four days each, are required in addition to the regularly scheduled laboratories. (S)

110. Morphology of Bryophytes and Lower Vascular Plants

(4) Staff

Prerequisites: Biology 11A-B-C, or consent of instructor. Lecture, 2 hours; laboratory, 6 hours.

Study of the structure, life cycles, anatomy, and relationships of bryophytes and lower fossil and living vascular plants; conquest of the land. (S; not offered 1987-88.)

111. Morphology of the Higher Vascular Plants

(5) Staff

Prerequisites: Biology 11A-B-C, or consent of instructor. Lecture, 3 hours; laboratory, 6 hours.

Study of the structure, life cycles, anatomy, and relationships of the fossil and living higher vascular plants; evolution of ovule, angiosperm, and the flower. (S)

113. Plant Anatomy

(5) Staff

Prerequisites: Biology 11A-B-C, or consent of instructor. Lecture, 3 hours; laboratory, 6 hours.

An introduction to the anatomy of vascular plants. Fundamental descriptive, developmental, and comparative aspects of anatomy. (F)

114. Ecological Plant Anatomy

(3) Staff

Prerequisite: Botany 113. Lecture, 2 hours; laboratory, 3 hours.

The anatomical adaptations of vascular plants to environmental factors. (W; not offered 1987-88.)

120. Introductory Plant Physiology

(3) Staff

Prerequisites: Biology 11A-B-C; organic chemistry or consent of instructor. Lecture, 3 hours.

Functions of vascular plants; photosynthesis, assimilation, water relations, and growth regulators. (S)

120L. Laboratory in Introductory Plant Physiology

(2) Staff

Prerequisites: concurrent enrollment in Botany 120 and consent of instructor. Laboratory, 6 hours.

Laboratory experiments and procedures in plant physiology. (S)

123. Plant Physiology in Relation to Soil Factors

(3) Staff

Prerequisites: Biology 11A and 11C or consent of the instructor. Lecture, 3 hours.

Development and characteristics of soils. Physiology of higher plants as affected by water, minerals, and other variables in the soil. (W)

140. General Plant Ecology

(3) Mahall

Prerequisites: Biology 11A-B-C. Lecture, 2 hours; discussion, 1 hour.

An introduction to the principles of plant ecology (F)

140L. General Plant Ecology Lab

(2) Mahall

Prerequisites: Biology 11A-B-C and consent of instructor. Laboratory and field, 6 hours.

Field and laboratory research techniques. (F)

141. Physiological Plant Ecology

(4) Mahall

Prerequisites: Biology 11A-B-C, Botany 140, and consent of instructor. A course in plant physiology is strongly recommended. Lecture, 3 hours; laboratory, 3 hours.

A study of the environmental and physiological parameters of plant distributions and niches. (W; offered even-numbered years.)

142. Community and Ecosystem Ecology

(4) Nadkarni

Prerequisite: consent of instructor. Botany 140 is recommended. Lecture, 3 hours; laboratory, 3 hours.

The structure and function of plant communities including energy flow and mineral cycling processes. (W)

146. Plant Geography: World Vegetation

(4) Haller

Prerequisite: one of the following: Botany 103B, Botany 140, Geography 3, Environmental Studies 13. Lecture, 4 hours.

The composition and distribution of plant communities and vegetation types throughout the world in relation to past and present environmental factors, especially climates and soils. (F; offered even-numbered years.)

147. Plant Geography: Evolution, Distribution, and Relationships of Floras

(4) Haller

Prerequisite: one of the following: Botany 103A, Botany 146, Botany 151; all three are recommended. Lecture, 4 hours.

The past and present distributions of taxonomic groups of vascular plants and of regional floras; the phenomena related to these distributions, including continental movement, climatic change, migration, endemism, vicariance, and evolution. (F; offered odd-numbered years.)

151. Taxonomy of Vascular Plants

(4) Staff

Prerequisites: Biology 11A-B-C, Botany 103A-B, or consent of instructor. Lecture, 2 hours; laboratory, 6 hours.

A systematic study of the characteristics and relationships of vascular plant families; the history, principles, and methods of plant classification. (F; not offered 1987-88.)

152. Principles of Plant Systematics and Evolution

(3) Staff

Prerequisites: at least one course in both taxonomy and genetics and consent of instructor. Lecture, 3 hours.

Variation and evolution in higher plants and the relations of these phenomena to taxonomic practice. (W; offered odd-numbers years; not offered 1987-88.)

153. Field and Experimental Methods in Plant Systematics

(4) Staff

Prerequisites: at least one course in both taxonomy and genetics and consent of the instructor. Lecture, 1 hour; laboratory, 6 hours. Field trips to be arranged.

The application of field and laboratory procedures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotoxicology, chemotaxonomy. (S; offered even-numbers years; not offered 1987-88.)

170. Phycology

(4) Neushul

Prerequisites: Biology 11A-B-C. Lecture, 2 hours; laboratory, 6 hours.

An introduction to the algae, with emphasis on comparative morphology, evolution, and classification. Attention is also given to environmental factors that influence marine and freshwater algal habitats. (F)

171. Advanced Phycology

(4) Neushul

Prerequisite: Botany 170 or consent of instructor. Lecture, 2 hours; laboratory, 6 hours.

Development, differentiation, and morphogenesis in algae. Emphasis is placed in the laboratory on the experimental manipulation of living plants. Algal cells are studied using both light and electron microscopes. (W; not offered 1987-88.)

GRADUATE COURSES**223. Plant Physiology in Relation to Soil Factors**

(3) Staff

Prerequisites: Biology 11A-B and consent of instructor. Lecture, 3 hours.

Development and characteristics of soils. Physiology of higher plants as affected by water, minerals, and other variables in the soil. (W)

241. Advanced Physiological Plant Ecology

(5) Mahall

Prerequisites: Biology 11A-B-C, Botany 140, and consent of instructor. A course in plant physiology is strongly recommended. Lecture, 3 hours; laboratory, 6 hours.

A study of the environmental and physiological parameters of plant distributions and niches with special reference to methods. (W)

242. Community and Ecosystem Ecology

(4) Nadkarni

Prerequisite: Botany 140 or consent of instructor. Lecture, 3 hours; laboratory, 3 hours.

The structure and function of plant communities including energy flow and mineral cycling processes. A major term paper will be required. (W)

252. Principles of Plant Systematics and Evolution

(3) Smith

Prerequisites: at least one course in both taxonomy and genetics and consent of instructor. Lecture, 3 hours.

Variation and evolution in higher plants and the relation of these phenomena to taxonomic practice. (W; offered odd-numbers years.)

253. Field and Experimental Methods in Plant Systematics

(4) Smith

Prerequisites: at least one course in both taxonomy and genetics and consent of instructor. Lecture, 1 hour; laboratory, 6 hours.

The application of field and laboratory procedures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotoxicology, chemotaxonomy. (S; not offered 1987-88.)

ZOOLOGY COURSES**LOWER DIVISION****25. Human Anatomy**

(4) Staff

Recommended: Biology 20 or other course in biology. Lecture, 3 hours; discussion, 1 hour.

The structure of the organ systems based on human material. (F,W)

25L. Laboratory in Human Anatomy

(4) Staff

Prerequisite: students must have previously taken, or be concurrently enrolled in, Zoology 25. Laboratory, 8 hours; discussion, 1 hour.

Dissection of the cat and human material. (W,S)

40. Human Physiology

(4) Laris

Prerequisites: Chemistry 1A or 25, or Physics 6A or 10. Concurrent enrollment in Zoology 40L except for those for whom Zoology 40 is an elective. A course in general biology or anatomy is recommended. Lecture, 3 hours; discussion, 1 hour.

An introduction to human physiology, with emphasis on control mechanisms. (S)

40L. Laboratory in Human Physiology

(1) Laris

Prerequisite: concurrent enrollment in Zoology 40. Laboratory, 3 hours.

An elementary course in experimental physiology, with emphasis on mammals. (S)

UPPER DIVISION**100. Developmental Biology**

(3) Triplett

Prerequisites: Biology 11A-B-C; genetics recommended. Lecture, 3 hours.

Descriptive embryology of vertebrates and an introduction to developmental mechanisms. (W)

100L. Laboratory in Developmental Biology

(2) Triplett and Staff

Prerequisite: concurrent enrollment in Zoology 100. Laboratory, 3 hours; discussion, 1 hour. Laboratory techniques in developmental biology. (W)

105. Functional Design of Fishes

(4) Ebeling

Prerequisites: Biology 11A-B-C. Lecture, 3 hours; laboratory, 3 hours.

An introduction to the study of fishes, emphasizing the interaction of morphology and function. (F; offered even-numbered years.)

108. Vertebrate Evolutionary Morphology

(5) Sweet

Prerequisites: Biology 11A-B-C. Lecture, 3 hours; laboratory, 6 hours.

Lectures concern evolutionary and functional aspects of the development of structural complexity in vertebrates, emphasizing the role of size in determining mechanical and physiological optima and limits, and the constraints imposed by the evolutionary process. Labs involve dissections and demonstrations. (F; offered even-numbered years)

111. General Parasitology

(5) Kuris

Prerequisites: Biology 11B-C. Lecture, 3 hours; laboratory, 6 hours.

An ecological approach to parasitism. Parasites of humans and other animals are surveyed. Evolutionary, sociological, political, and economic aspects are discussed. Laboratory stresses anatomy and life cycle of living material. (S)

112A. Invertebrate Zoology

(5) Kuris and Trench

Prerequisites: Biology 11B-C, or biology in the 20 series with consent of instructor. Lecture, 3 hours; laboratory, 6 hours.

An introduction to the classification, structure, life histories, and habits of the major phyla of invertebrate animals (excluding annelids and arthropods), with emphasis on the marine fauna of the Santa Barbara area. Zoology 112B is strongly recommended to complete the invertebrate zoology sequence. (F)

112B. Invertebrate Zoology: Higher Invertebrates

(5) Wenner

Prerequisites: Biology 11A-B-C, or biology in the 20 series and consent of the instructor. Lecture, 3 hours; laboratory, 6 hours.

An introduction to the classification, structure, life histories, and habits of annelids and arthropods, with emphasis on the aquatic fauna of the Santa Barbara area. (W)

113A. Evolution and Behavioral Ecology of Terrestrial Vertebrates

(2) Rothstein

Prerequisites: Biology 11A-B-C and concurrent enrollment in Zoology 113AL. Lecture, 2 hours. Evolutionary and ecological principles as demonstrated by amphibians, reptiles, birds, and mammals; competition and other species interactions; diversity and systematics with special emphasis on speciation theory. (F)**113AL. Laboratory and Discussion in Vertebrate Biology**

(3) Rothstein

Prerequisite: concurrent enrollment in Zoology 113A. Laboratory, 6 hours; discussion, 1 hour.

Classification, identification, and observation of local terrestrial vertebrates. Introduction to techniques such as trapping and banding to study vertebrates in the field. (F)

113CL. Laboratory and Individual Research in Vertebrate Biology

(2-4) Rothstein

Prerequisites: Zoology 113B and 113BL and consent of instructor. Laboratory, 5 to 11 hours; discussion, 1 hour.

Field studies of the vertebrates of California, stressing species and communities, requiring several extensive field trips; individual field and/or lab research projects dealing with theoretical problems posed by the biology of vertebrates. (S)

125. Entomology

(5) Staff

Prerequisites: Biology 11A-B-C. Not open to students who have previously taken Zoology 124, 125, or 126. Lecture, 3 hours; laboratory, 6 hours.

Selected topics in entomology, including classification, evolution, anatomy, life histories, and environmental adaptations. Laboratory includes studies of natural history and diversity of insects in the local area, with an emphasis on their distribution, abundance, identification, systematics, and environmental adaptations. (F)

130. Biology of Amphibians and Reptiles

(4) Sweet

Prerequisites: Zoology 113A, 113AL; 113B, 113BL, or consent of instructor. Lecture, 2 hours; discussion, 1 hour; laboratory, 3 hours.

The evolution, systematics, and functional morphology of modern amphibians and reptiles. Lectures will treat worldwide diversity; laboratories will emphasize western North American faunas. A term paper will be required (S; offered even-numbered years.)

138. Ethology and Behavioral Ecology

(5) Rothstein and Warner

Prerequisite: Biology 11B. Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours.

Animal behavior and social organization viewed from evolutionary and whole animal perspectives. Stress will be placed on the manner in which the environment influences natural selection for various behavioral patterns. Specific topics will include: classical ethology, motivation and drive, development and learning, communication, foraging, aggression, territoriality, social groupings, mating systems, parental care, altruism, and sociobiology (W; offered odd-numbered years; not offered 1987-88.)

139. Evolutionary Ecology

(4) Holbrook and Warner

Prerequisites: Biology 11A-B-C, Biology 120. Lecture, 3 hours; discussion, 1 hour.

The evolution of life history patterns (fecundity, mortality, sexual expression). Forms of natural selection. Coevolution and other evolutionary aspects of community structure and function. Topics in paleoecology. (W; offered even-numbered years.)

141. Ecological Observation and Experimentation

(4) Holbrook

Prerequisite: Biology 120. Lecture, 3 hours; discussion, 1 hour.

Field and laboratory methods of testing ecological principles and theory. Topics will include the role of observation, design of experiments, and interpretation of data. (S; offered odd-numbered years.)

142. Ecology

(4) Connell

Prerequisites: Biology 11A-B-C, Biology 120 or an equivalent course in ecology, and consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Advanced studies of the biology of populations and ecological communities. (F)

143. Ecological Physiology

(3) Childress

Prerequisites: Biology 11A-B-C. Lecture, 3 hours.

This course will consider the physiological responses and adaptations of animals to their environments. The underlying physiological and biochemical mechanisms will be emphasized. The approach will be comparative in nature and will emphasize aquatic animals. (W)

143L. Laboratory in Ecological Physiology

(2) Childress

Prerequisite: concurrent enrollment in Zoology 143. Laboratory, 6 hours.

Semi-independent study lab to accompany Zoology 143. The physiological responses and adaptations of animals to their environment will be studied. Aquatic animals will be emphasized. (W)

154. Vertebrates Physiology I: Regulation of Body Fluids

(3) W. N. Holmes

Prerequisite: Biology 11A-B-C. Lecture, 3 hours.

The composition and distribution of the fluids in the extracellular and intracellular compartments of the vertebrate body will be studied. The homeostatic mechanisms responsible for the turnover and regulation of these fluids will also be examined. (W)

155. Vertebrate Physiology II: General Endocrinology

(3) W. N. Holmes

Lecture, 3 hours.

An introduction to the endocrine system in vertebrates and the nature of hormonal control mechanisms. (S)

156. Vertebrate Physiology III: Reproduction

(4) Collins

Lecture, 3 hours; discussion, 1 hour.

The hormonal mechanisms which regulate the initiation and maintenance of reproductive function in vertebrates will be examined at the organismal, cellular, and intracellular level. The regulation of fertilization, pregnancy, and parturition will be reviewed. Endocrine aspects of this subject will not duplicate the endocrine topics covered in Zoology 155, and will provide an appropriate background in physiology for Biology 110B. (S)

160. Environmental Pollutants and Hormonal Regulation

(4) W. N. Holmes

Prerequisite: Zoology 155 or consent of instructor. Lecture, 3 hours; discussion, 1 hour. Selected examples will be used to show how the presence of some pollutants in the food web may adversely affect some essential hormonal systems in vertebrates. Particular attention will be paid to the effects of chlorinated hydrocarbon and organophosphate insecticides and petroleum hydrocarbons on steroid hormone regulated systems. (S; not offered 1987-88.)**161. Systematics of Fishes**

(4) Ebeling

Prerequisites: Biology 11A-B-C. Lecture, 2 hours; laboratory, 6 hour.

The systematics of fishes, emphasizing their evolution, classification, and distribution. (F; offered odd-numbered years.)

GRADUATE COURSES

211. General Parasitology

(5) Kuris

Prerequisites: Biology 11A-B-C. Lecture, 3 hours; laboratory, 6 hours.

An ecological approach to parasitism. Parasites of humans and other animals are surveyed. Evolutionary, sociological, political, and economic aspects are discussed. Laboratory stresses anatomy and life cycles of living material (S)

212. Topics in Parasitology

(3) Kuris

Prerequisite: consent of instructor. Qualified undergraduates may take course with consent of instructor. Lecture, 2 hours; laboratory, 3 hours.

Consideration of theoretical aspects of parasite ecology, evolution, and physiology. General biology of a selected group of parasites chosen in consultation with students. Laboratory: individualized study of parasitological aspects relevant to student's general interests. An oral and written report are required. (W, not offered 1987-88.)

255. Comparative Endocrinology

(3) W. N. Holmes

Prerequisite: consent of instructor. This course is offered concurrently with Zoology 155. Lecture, 3 hours.

A detailed study of the hormonal regulatory mechanisms in vertebrates. Students will be examined separately, and will also be required to submit a term paper on an approved topic. (S)

255L. Experimental Endocrinology

(3) W. N. Holmes

Prerequisite: Zoology 255. Laboratory, 6 hours; discussion, 1 hour.

Techniques of experimental endocrinology. (S)

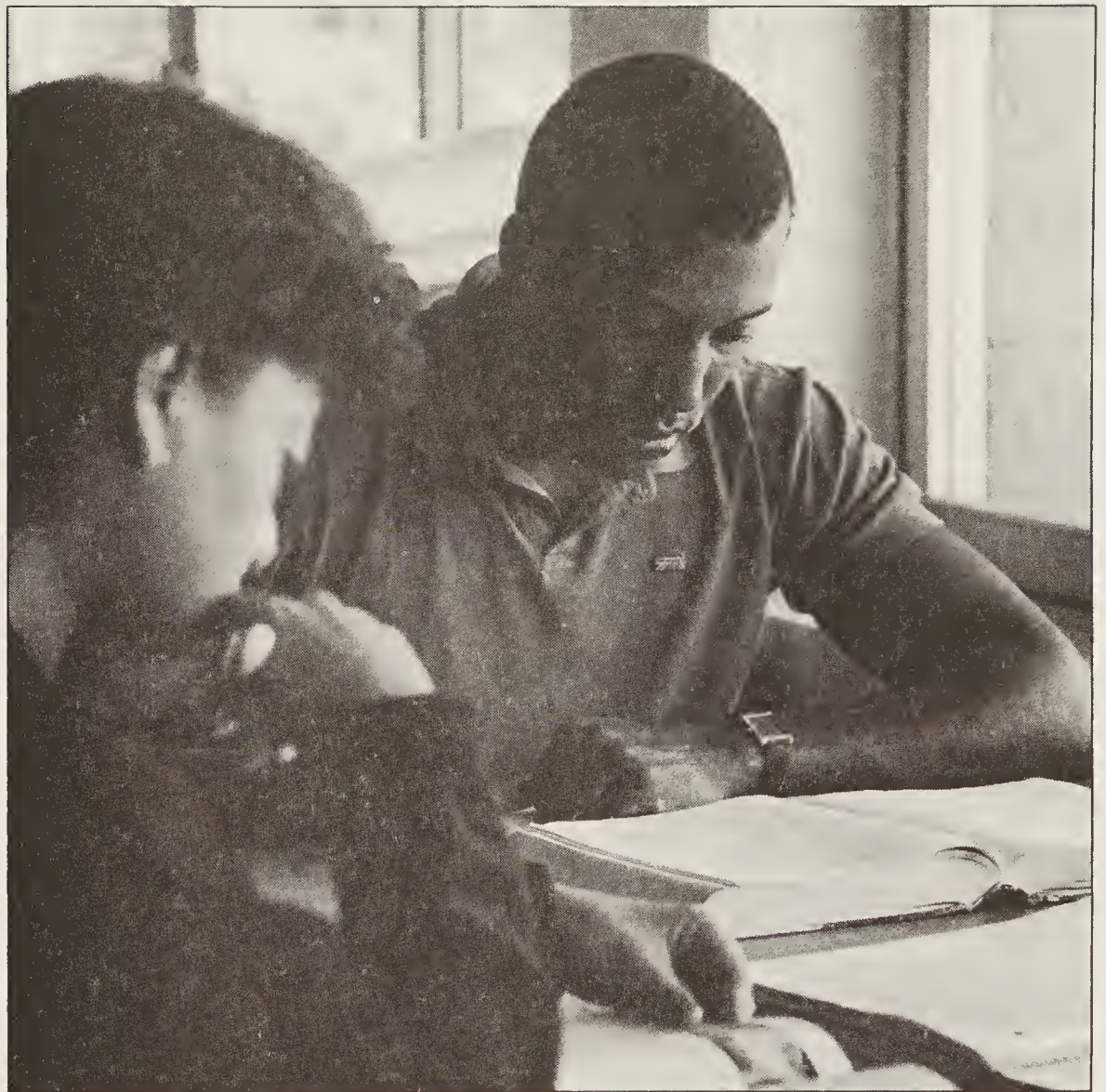
Black Studies

Department of Black Studies, South Hall 3631;
Telephone (805) 961-3800, 961-3847.
Department Chair: Douglas H. Daniels

Faculty

Douglas H. Daniels, Ph.D., UC Berkeley,
Associate Professor (*American and Afro-*
American history)
Manthia Diawara, Ph.D., Indiana University,
Assistant Professor (*comparative literature*)
Gerard G. Pigeon, Ph.D., UC Santa Barbara,
Associate Professor (*French literature and*
linguistics)
Garry Rolison, Ph.D., UC Santa Cruz, Assistant
Professor (*social stratification, race*
relations, and theories of class)
Richard B. Turner, Ph.D., Princeton University,
Assistant Professor (*religion*)

The Department of Black Studies seeks to increase the general awareness and understanding of the Black experience through an examination of its historical and contemporary manifestations in various societies. It utilizes a cross-cultural approach, incorporating the active participation of faculty, students, and the wider community. The department offers a major leading to the B.A. degree. The faculty is available to students who are pursuing graduate degrees in other departments on topics in the area of Black Studies.



The major in Black Studies is designed to provide (1) a broad, cross-cultural orientation focusing on the heritage and contemporary social situation of Black people, and (2) instruction for students who intend to do graduate work in the area of ethnic-American studies or allied areas in the social sciences, humanities, or arts. The major provides suitable undergraduate preparation for careers in teaching, community services, or governmental agencies. After completing specific prerequisites, students with a bachelor's degree in Black Studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Students majoring in Black Studies are assigned by the department chair to a member of the faculty for academic and career advising. Each quarter, prior to registration, the department publishes a description of the content of courses to be offered. A second publication, describing the undergraduate program and courses, is updated periodically. Both publications are available in the department office.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Black Studies

Preparation for the major. Required: Black Studies 1A-B-C, Black Studies 2, and four courses from the following departments, with not more than two from any one department (recommended courses are in parentheses): Anthropology (2, 3, 5); Economics (1,2); Geography (3,5); History (4A-B-C or 17A-B-C); Philosophy (1 or 5); Political Science (3, 12); Sociology (1, 2).

Except for Black Studies courses, courses taken in preparation for the major will also apply to appropriate General Education requirements. Black Studies majors are encouraged to take at least three quarters of a foreign language of their choice.

Upper-division major. Thirty-six units of upper-division Black Studies courses are required, 12 units of which may be taken in upper-division work in closely related departments or fields, chosen in consultation with the department adviser.

BLACK STUDIES COURSES

LOWER DIVISION

1A. Introduction to the Cultures and Peoples of African Heritage: The United States of America

(4) Daniels

The course's objective is to acquaint beginning students with the historical and current social condition of Black people in North America. Required as preparation for the major in Black Studies.

1B. Introduction to the Cultures and Peoples of African Heritage: Latin America and the Caribbean

(4) Pigeon

Survey of the history and culture of Black peoples in Latin American countries and the Caribbean. Required as preparation for the major in Black Studies.

1C. Introduction to the Cultures and Peoples of African Heritage: The African Continent
(4) Staff
Introductory survey of African societies from a historical and cultural perspective.

2. Group Exploration of Racism
(4)
Not restricted to majors in Black Studies. Limited enrollment.
Discussions designed to explore, identify, and understand the social and emotional pathology of racist orientations as they appear in everyday life. Focus on personal experiences, with extensive student involvement and participation expected.

4. Africa Survey
(4) Staff
Introduction to African studies, emphasis on tropical Africa: sections on physical environment, history, economy, values, literature, religion, and arts of selected African societies.

5. Blacks and Western Civilization
(4) Daniels
An interdisciplinary analysis of the effects of Africa on Western Civilization, specifically the politics, economics, and cultures of Europe, the Caribbean, and North America.

6. The Civil Rights Movement
(4) Daniels
History of the modern civil rights movement, its organization and ideology from its origins in the post reconstruction era, to its triumphs with the end of legal racial segregation, and its recognition in the civil rights legislation in the 1960s.

15. The Psychology of Blacks
(4) Staff
An examination of the Black ethos. The connections between Africa, the Caribbean, and Afro-America are examined with respect to the psychological traits common to Black people.

20. Introduction to Afro-American Politics
(4) Staff
Provides a politico-historical overview of Afro-American involvement in the politics of the United States from slavery to the present.

25. Introduction to African Politics
(4) Staff
A survey of African politics concentrating on precolonial, colonial, and contemporary periods.

36. Oral Tradition of the Afro-American Cultures of the Diaspora
(4) Pigeon
Note: students who have received credit for Black Studies 128 may not take this course for credit.
Oral traditions of Afro-American and Caribbean cultures as expressed in Black idioms and folklore with some attention to the African background.

38A. Introduction to Afro-American Literature (Part I)
(4) Staff
Note: students who have received credit for Black Studies 38 may take this course for credit.
Afro-American literature from colonial times through the Harlem Renaissance.

38B. Introduction to Afro-American Literature (Part II)
(4) Staff
Note: students who have received credit for Black Studies 38 may take this course for credit.
Afro-American literature from the 1930s to the present.

49. Black Music Performance Vocal Ensemble
(1) Staff
Prerequisite: Black Studies 36, 60A or 60B; by audition. May be repeated for credit to a maximum of six units, but only four units of credit allowed for the major.
A performance course for the study and practice of Afro-American vocal music, including spirituals, gospels, popular music, and art music. Practical instruction in vocal techniques. Performances on- and off-campus. Prior performance experience desired but not required.

50. Blacks in the Media
(4) Staff
The development of Black stereotypes. Studying literature, comic books, comic strips, cartoons, music, theater, cinema, broadcasting, and television, students will analyze the mythical images which have created stereotypes.

60A. Religion in Black America (Part I)
(4) Turner
A historical examination, beginning with West African heritage, of Afro-American religious leaders and organizations in the United States during slavery and until the end of the nineteenth century.

60B. Religion in Black America (Part II)
(4) Turner
A historical survey of major Black religious figures, organizations, movements, philosophies, and issues. Emphasis on contemporary religious phenomena in the Black religious community of the United States during the twentieth century.

UPPER DIVISION

101. Black Legislators and Elected Officials in North America
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Problems for the Black American regarding access to the incumbency in political office. Vantage point of Black legislators on major social problems and issues will be explored. Both historical and comparative analyses will be emphasized.

102. Black Radicals and the Radical Tradition
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
This course will examine the tradition of radical thought and the relevance of this thought to the needs and interests of the Black community.

103. The Politics of Black Liberation — The Sixties
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
The origins of various Black liberation organizations and their ideologies and strategies in the 1960s. Study of grass roots organizations and their struggles sheds light on the developments that occurred when this movement encountered the intransigence of entrenched American racism.

104. Political Action in the Black Community
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
An examination of actions and reactions of Black elected officials (in California) to public issues having particular relevance to the Black community, and the techniques and procedures adopted by the elected officials in response to community demands on these issues.

105. An Introduction to African Nationalism
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
An introduction to African nationalism through comparative study of African cultures.

110. Economic Theory, Practice, and the Social Condition of the Black American
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
National economic policy, the theory by which it is guided and the manner in which it molds the social condition of the Black American. Attention will be given to the tradition in economic thought from which our national policy-making derives.

111. Black Business Ownership and Development
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
An examination of the problems associated with Black ownership of business in the American economy; an analysis of Black involvement in business, entrepreneurship, consumerism, and other problems of related interest which concern the business environment of Black Americans.

113. African Folklore and Oral Traditions
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
This course studies the structural poetics of African myths and folklore. Oral tales and epics will be examined. The objective is to learn about African history and culture through oral traditions.

114. The History of Jazz
(4) Daniels
Prerequisite: upper-division standing or consent of instructor.
This course will focus on the growth of jazz and its emergence as a distinctive form. Jazz artists will be invited.

121. The Black Family in the United States
(4) Rolison
Prerequisite: upper-division standing or consent of instructor.
A developmental analysis of the role and significance of family life in the Black experience. Particular attention will be paid to the various forces that have influenced the structural and behavioral aspects of family life among Black Americans.

122. Creative Teaching and the Black Child
(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Analysis of problems in the education of the Black child; exploration of creative teaching and classroom methods presently employed to assist Black youngsters to adjust to the school's environment and provide a more fulfilling learning experience.

123. Race, Class, and Social Change

(4) Rolison

Prerequisite: upper-division standing or consent of instructor.

Significance of race and class for Black Americans as they relate to industrialization, urbanization, and social change. Special attention to racial and class dimensions of social change in the aftermath of the civil rights movement.

126. Black Urban History

(4) Daniels

Prerequisite: upper-division standing or consent of instructor.

An analysis of the urban dimension of Black history. In addition to the colonial setting, we shall focus on the modern urban life of Afro-Americans, their work, neighborhood locations, recreation, and contributions, examining in detail five specific cities.

127. Black Womanhood in Afro-American Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

A study of Afro-American female authors, such as Zora Neale Hurston, Gwendolyn Brooks, Alice Walker, and Toni Morrison. The course examines the experiences of being Black and female, while relating historical, social, and political issues to the literature.

129. Myth and Symbolism in Afro-American Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

This course will explore the development of the mythic and symbolic imagination in some of the major works of Afro-American writers.

130A. French African Literature and Literary Figures

(4) Pigeon

Prerequisite: upper-division standing or consent of instructor.

History of French African literature with emphasis on its development in Africa and the West Indies; the concept of negritude from its birth to the present.

130B. Colonialism in French African Literature

(4) Pigeon

Prerequisite: upper-division standing or consent of instructor.

A study of the ideologies and tendencies which appeared simultaneously in Africa and the French West Indies after the independence of Africa. Writers studied will include Mongo Beti, Camara Laye, Aime Cesaire, Ferdinand Oyono, and Ousmane Sembene.

132. Seminar in Afro-American Literature

(4)

Prerequisite: upper-division standing.

A comparative analysis of the different creative visions in Afro-American literature. Selected authors and their work will be read intensively and students will prepare imaginative manuscripts based on the techniques of those writers.

133A. Introduction to West Indian Literature

(4) Pigeon

Prerequisite: upper-division standing or consent of instructor.

This course will deal with the work of West Indian poets from the French-speaking islands of the West Indies. It will thus deal with the development of poetry in Haiti, Guadeloupe, and Martinique, with a brief escape to French Guyana.

133B Introduction to West Indian Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

This course will deal with the work of West Indian poets from the Spanish-speaking islands of the West Indies. It will thus deal with the development of poetry in Cuba and Puerto Rico.

133C. Introduction to West Indian Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

This course will deal with the work of West Indian poets from the English-speaking islands of the West Indies. It will thus deal with the development of poetry in Jamaica and Trinidad.

134. Seminar on Aime Cesaire

(4) Pigeon

Prerequisite: upper-division standing or consent of instructor.

In-depth study of plays, novels, poetry, and political treatises of this renowned Martiniquais writer.

135AA-ZZ. Special Topics in African Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

Reflections of African society in fiction by Europeans and Africans of both Black and White races.

142. Music in Afro-American Culture: U.S.A.

(4) Staff

Prerequisite: upper-division standing.

Introduction to the music of Afro-Americans in the U.S.A. from the antebellum era to the present, including folk, religious, popular, and classical music forms. The sociology of Black music in America will form the basis for lectures and discussions.

143. Music in Afro-American Cultures: Latin America and the Caribbean

(4) Staff

Prerequisite: upper-division standing.

An ethnomusicological study of Afro-American music in the Caribbean and Latin America, with special emphasis on music acculturation. The course will include the examination of folk, religious, and popular music.

144. Music in African Cultures

(4) Staff

Prerequisite: upper-division standing.

An introduction to music in traditional and contemporary Africa. Special emphasis will be placed on the way in which cultural factors influence the production of music. The course will also cover the development of popular music in urban areas.

149. Black Music Performance: Vocal Ensemble

(1) Staff

Prerequisite: Black Studies 49; by audition.

May be repeated to a maximum of six units; only four units may be applied for credit toward the major.

A performance course for the study and practice of Afro-American vocal music, including spirituals, gospels, popular music, and art music. Practical instruction in vocal techniques. Performance on- and off-campus. Prior performance experience desired but not required.

150. History of American Sports: Twentieth Century

(4) Daniels

Prerequisite: upper-division standing or consent of instructor.

A critical examination of the history of sport, ascribed values, major personalities, and issues surrounding the development of sport as a social reality from 1900 to the present. Course will examine discrepancies and conflicts which engulf sporting subculture.

160A. Analyses of the Racist Experience

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

This course explores the origins and maintenance of racist ideology, practices, and policies as they affect personal and interpersonal behavior. Specific attention will be paid to the phenomenon of scientific racism.

160C. The African Liberation Movements

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

The African reaction to the experience of colonialism and apartheid. A survey of African revolutionary movements with special emphasis on contemporary issues. The course will emphasize the theoretical as well as the practical bases of African revolutionary movements.

170. Afro-Americans in the American Cinema

(4) Diawara

An examination of the representation of Afro-Americans in the Hollywood feature film, from 1915 to the present. The course explores the relationship between screen icons and the racial attitudes held by Black and White Americans.

171. Africa in Film

(4) Diawara

Prerequisite: upper-division standing or consent of instructor.

The purpose of this course is to provide an understanding of African cultures, traditions, and politics as depicted by African and non-African filmmakers. Students will explore stereotypical as well as positive and romantic images of Africa. Films: semi-documentaries, documentaries, fiction.

172. Contemporary Black Cinema

(4) Diawara

Prerequisite: upper-division standing or consent of instructor.

The course explores the new directions in Afro-American cinema with emphasis on the directors, the aesthetics and the social content of contemporary Black film. The problems of production, distribution and exhibition will be examined.

173. National Cinemas of Africa

(4) Diawara

Prerequisite: upper-division standing or consent of instructor.

The growth of cinema in such African countries as Senegal and Burkina Faso, either as a national or an individual effort. Particular attention will be given to the issues of production, distribution, aesthetics, and censorship.

191AA-ZZ. Special Topics in Black Studies

(4) Staff

Prerequisite: upper-division standing or consent of instructor. May be taken up to three times providing the letter designations are different.

Designed to broaden opportunities for students by offering varying topics related to the Black experience but not a part of the formal curriculum.

Examples might be The Afro-American Soldier; Afro-American Folklore. Afro-American Art or Drama.

196. Bibliographic Methods in Black Research

(4)

Prerequisite: upper-division standing

Methods of obtaining information on the Black experience, utilizing written, multimedia, and other sources, with emphasis on Afro-American materials, but also covering Africa, the Caribbean, and other parts of the diaspora.

197. Field Research

(1-8) Staff

Prerequisites: upper-division standing, 3.0 overall grade-point average, approval of project by faculty sponsor and department chair.

Directed field research on a topic in Black Studies

198. Readings in Black Studies

(4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Black Studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Enrollment limited. Reading and discussion will be centered around a single topic or problem to be announced in advance by the instructor.

199. Independent Studies in Black Studies

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Black Studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Admission by special permission of the department.

GRADUATE COURSES

205. Methodology of Black Culture

(4) Staff

Prerequisite: B. A. degree.

This course is to acquaint the student with the concepts, theories, norms, world view, theses, laws, etc., which the mind has to follow to arrive at the validity of Black cultural expressions.

501. Teaching Methodology in Black Studies

(1-4) Staff

Prerequisite: appointment as teaching assistant in Black Studies.

For graduate students who serve as teaching assistants: analyses of texts and materials; discussion of teaching techniques; conducting discussion sections; formulation of topics and questions for papers and examinations; and grading papers and examinations under supervision of instructor assigned to course.

596. Directed Reading and Research

(2-5) Staff

Prerequisite: graduate standing. May be repeated for credit on approval of chair. Individual tutorial. Plan of study must be approved by department chair.

598. Master's Thesis Research and Preparation

(2-8) Pigeon

Prerequisites: graduate standing and consent of instructor. No unit credit allowed toward advanced degree.

Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

Chemistry

Department of Chemistry, Chemistry Building 1005; Telephone (805) 961-2931. Department Chair: Bernard Kirtman.

Faculty

Curtis B. Anderson, Ph.D., UC Los Angeles, Associate Professor (*organic chemistry*)
 Donald H. Aue, Ph.D., Cornell University, Associate Professor (*organic chemistry*)
 Michael T. Bowers, Ph.D., University of Illinois, Professor (*physical chemistry*)
 Paula Yurkanis Bruice, Ph.D., University of Virginia, Senior Lecturer with Security of Employment (*bio-organic chemistry*)
 Thomas C. Bruice, Ph.D., University of Southern California, Professor (*bio-organic chemistry*)
 Clifford A. Bunton, Ph.D., University College (London), Professor (*organic chemistry*)
 Alison Butler, Ph.D., UC San Diego, Assistant Professor (*bio-inorganic chemistry*)
 James P. Cowin, Ph.D., University of Chicago, Assistant Professor (*physical chemistry*)
 Peter C. Ford, Ph.D., Yale University, Professor (*inorganic chemistry*)
 J. Thomas C. Gerig, Ph.D., Brown University, Professor (*bio-organic chemistry*)
 David O. Harris, Ph.D., UC Berkeley, Professor (*physical chemistry*)
 Thomas M. Hooker, Jr., Ph.D., Duke University, Professor (*biophysical chemistry*)
 William C. Kaska, Ph.D., University of Michigan, Professor (*inorganic chemistry*)
 John H. Kennedy, Ph.D., Harvard University, Professor (*electrochemistry and analytical chemistry*)
 Bernard Kirtman, Ph.D., Harvard University, Professor (*theoretical physical chemistry*)
 Bruce H. Lipshutz, Ph.D., Yale University, Associate Professor (*organic chemistry*)
 R. Daniel Little, Ph.D., University of Wisconsin, Professor (*organic chemistry*)
 Richard M. Martin, Ph.D., University of Wisconsin, Professor (*physical chemistry*)
 Horia I. Metiu, Ph.D., Massachusetts Institute of Technology, Professor (*theoretical physical chemistry*)
 Glenn H. Miller, Ph.D., Brown University, Professor (*polymer chemistry*)
 Roger C. Millikan, Ph.D., UC Berkeley, Professor (*physical chemistry*)
 Henry W. Offen, Ph.D., UC Los Angeles, Professor (*physical chemistry*)
 William E. Palke, Ph.D., Harvard University, Professor (*theoretical physical chemistry*)
 Stanley M. Parsons, Ph.D., California Institute of Technology, Professor (*biological chemistry*)
 Ralph G. Pearson, Ph.D., Northwestern University, Professor (*inorganic-physical chemistry*)
 Glyn O. Pritchard, Ph.D., Manchester University, Professor (*physical chemistry*)
 Norbert O. Reich, Ph.D., UC San Francisco, Assistant Professor (*biological chemistry*)
 Bruce Rickborn, Ph.D., UC Los Angeles, Professor (*organic chemistry*)

Galen Stucky, Ph.D., Iowa State University, Professor (*inorganic chemistry*)
 Richard J. Watts, Ph.D., University of Colorado, Professor (*inorganic chemistry*)
 Fred Wudl, Ph.D., UC Los Angeles, Professor (*organic chemistry, materials science*)

The major in chemistry provides excellent undergraduate preparation for careers in chemical research, teaching, medicine, environmental and industrial law, technical management, and environmental fields. The Department of Chemistry offers programs leading to either the B.A. or the B.S. degree. Both of these bachelor's degree programs may meet the standards recommended by the American Chemical Society for professional education in chemistry. The B.S. degree is recommended for students planning professional careers in chemistry; the B.A. degree may be more suitable for students with other career goals.

Entering students will be assigned an adviser who may be consulted on any matter pertaining to university work, including waivers and substitutions of major requirements. Students must submit their programs to the adviser for approval. After completing specific prerequisites, students with a bachelor's degree in chemistry are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Prizes, Honors, Loan Fund. The Willard L. McRary Prize in Chemistry is given to a graduating senior whose work in chemistry reflects the promise of outstanding scientific achievement, such as that which characterized the career of Professor McRary. The B. R. Baker Memorial Fellowship in Chemistry is awarded to graduate students who have given strong indication, by their graduate or undergraduate record, that they will make continued and substantial contributions to the progress of organic, medicinal, or biological chemistry. The Robert H. DeWolfe Teaching Fellowship is awarded to a graduate student in organic chemistry who has demonstrated excellence in undergraduate instruction. The John H. Tokuyama Memorial Loan Fund provides short-term or emergency loans specifically to graduate chemistry students at UCSB.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Chemistry

Preparation for the major. Chemistry 1A-B-C, 1AL-BL-CL (or 2A-B-C), 6A-B; Math 3A-B-C (or equivalent portions of 3S). Physics 1, 2, 3, 4, 3L, 4L, or Physics 6A-B-C, 6AL-BL-CL are required. A reading knowledge of a foreign language (German is particularly useful) is strongly recommended, though not required, for students planning advanced study in science.

Upper-division major. Thirty-six to 38 upper-division units, including Chemistry 130A-B-C, 113A-B-C, 114A or B, 150, 150L, 173A or B. One chemistry elective (at least 3 units and not 199) is required to complete the major. Chemistry 8A-B-C may be substituted for Chemistry 130A-B-C, but an additional 10 upper-division units in chemistry including at least one organic chemistry course (not 130A-B-C) must be taken to satisfy upper-division unit requirements of 36 units.

Students should consult an adviser in the Department of Chemistry regarding possible substitutions. Transfer students who receive subject credit for Chemistry 130 and/or 150 because they completed equivalent lower-division courses elsewhere must earn at least 36 upper-division units in chemistry.

The B.A. degree in chemistry will meet the standards recommended by the American Chemical Society (ACS) for professional education in chemistry provided the student completes three additional courses in chemistry, including two laboratory courses (Chemistry 6C may be used for partial fulfillment of this requirement.) Students should consult the senior adviser in regard to ACS certified degrees.

Bachelor of Science—Chemistry

Preparation for the major. Chemistry 1A-B-C, 1AL-BL-CL (or 2A-B-C), 6A-B-C; Math 3A-B-C or equivalent portions of 3S, Math 5A-B; Physics 1, 2, 3, 4, 3L, 4L are required. A reading knowledge of a foreign language (German is particularly useful) is strongly recommended, but not required, for students planning advanced study in science.

Upper-division major. Fifty-three upper-division units, including Chemistry 130A-B-C, 113A-B-C, 114A-B, 150, 150L, and 173A-B, are required. The remaining 12 major units will normally include two physical chemistry courses, one organic or biological chemistry course, and one upper-division laboratory course. Courses should be chosen after consultation with the junior or senior adviser. Transfer students who receive subject credit for Chemistry 130 and/or 150 must earn at least 44 upper-division units in chemistry.

Cooperative Program—Chemistry and Chemical Engineering

Chemistry students who are interested in an industrial career are advised to consider a five-year program leading to B.S. degrees in both chemical engineering and chemistry. Students in the cooperative program are required to register simultaneously in the College of Letters and Science and the College of Engineering. They are responsible for completing all degree requirements for each college.

Department of Chemistry requirements for the program include Chemistry 1A-B-C, 1AL-BL-CL, 6A-B-C, 130A-B-C, 150, 150L, 113B-C, 114A or B, 173A or B, and two additional upper-division courses in chemistry. Math 3A-B-C, 5A-B-C, Physics 1 (or Mechanical Engineering 10), and Physics 3, 4, 3L, 4L are also required.

Interested students may obtain more information about the program from the Department of Chemistry or the Department of Chemical and Nuclear Engineering. Final admission to the program is subject to the approval of the dean or provost of each college.

Senior Honors Program

The senior honors program is available to students with outstanding academic records. The program includes carrying out research (through Chemistry 199) in one of the departmental research groups, presenting a seminar describing this work, and preparing a written research report or thesis. Applications to the honors program should be made to the senior adviser, early in the fall quarter of the senior year.

GRADUATE PROGRAM

The M.S., M.A., or Ph.D. degrees in chemistry may be obtained in any one of the special fields of analytical, biological, inorganic, organic, physical, or theoretical chemistry. The *Graduate Division Announcement*, issued by the Graduate Division, contains admission and degree requirements.



My research interests span the interdisciplinary realm between inorganic chemistry and biochemistry. My group is interested in understanding how metal ions control certain biological reactions. At the moment we are investigating vanadium-bromoperoxidase, an enzyme found in many seaweeds which catalyzes the bromination of various organic substrates. Brominated metabolites found in seaweeds are often potent antifungal agents, which are of tremendous interest to the pharmaceutical industry. We are also directing our efforts toward synthesizing new vanadium compounds that mimic the enzyme.

Our chemistry department is first-rate. Our faculty are leaders in their fields, often dictating future directions and opening up new subdisciplines. We provide rigorous training to our graduate and undergraduate students. As a result, our students have done very well after leaving UCSB. The department is continuing to grow. We are hiring new faculty and acquiring more state-of-the-art instrumentation, which includes most recently two nuclear magnetic resonance spectrometers.

In the year and a half that I have been at UCSB, I have taught three quarters of introductory chemistry and a graduate course in my specialty. I have been delighted by the quality of the undergraduate and graduate students. My students have taught me as much as I have taught them, as we have engaged in some very animated and stimulating discussions. It is this sort of open exchange that the UCSB environment fosters and which enhances the process of making new discoveries.

Alison Butler
Assistant Professor
Department of Chemistry

◀ Dr. Butler was a National Institutes of Health postdoctoral fellow in bioinorganic chemistry at both UCLA and the California Institute of Technology before coming to UCSB, where she was awarded the Regents Junior Faculty Fellowship for 1986-87. She has given invited lectures in the U.S. and England and is a member of the Younger Chemists Committee of the American Chemical Society.

Master of Science or Master of Arts—Chemistry

The M.S. in chemistry may be attained under Plan 1 (thesis based on research). The M.A. in chemistry may be obtained under Plan 2 (examination). Experience as a teaching assistant is required, and the student must present a literature-based seminar to the department.

Doctor of Philosophy—Chemistry

There is no formal unit requirement for the Ph.D. In addition to courses within the area of specialization, students will normally take at least one advanced course in each of two areas outside their field. Progress toward the degree is followed by a series of cumulative examinations in the field of specialization or, for those in a biological chemistry field, by presentation and defense of two research propositions outside the immediate area of research specialization.

A preliminary oral examination, with major emphasis in a particular research area, is required for formal admission to Ph.D. candidacy. This examination is normally taken toward the end of the second year of graduate study. One year's experience as a teaching assistant is required, and the student must present a literature-based seminar to the department before advancement to candidacy.

Interdepartmental Program of Graduate Studies in Biochemistry and Molecular Biology

For details see catalog entry under Biochemistry and Molecular Biology.

CHEMISTRY COURSES

LOWER DIVISION

1A-B-C. General Chemistry

(3-3-3) Staff

Prerequisites: one year of high school algebra and exponents and logarithms. High school chemistry and physics are strongly recommended. Concurrent registration in Chemistry 1AL-1BL-1CL is required, or consent of instructor. Lecture, 3 hours.

Chemistry 1 develops a quantitative understanding of matter providing a basis for all fields of science and also for understanding industrial technology and environmental problems. This course is required for majors in chemistry and most other fields of science and engineering, but it can also provide a general education in science for the liberal arts student.

A: Stoichiometry, gas laws and kinetic theory, atomic and molecular structure, the periodic table, nature of solids, liquids, and solutions, phase equilibria.

B: Thermodynamics (1st and 2nd laws), reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium.

C: Structure and dynamics of the elements and their compounds. Aspects of technology and environmental problems.

1AL-BL-CL. General Chemistry Laboratory

(1-1-1) Staff

Prerequisite: concurrent registration in Chemistry 1A-B-C or consent of instructor. Laboratory, 4 hours.

Quantitative measurements demonstrating principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

2A. General Chemistry (Honors)

(4) Staff

Prerequisites: one year of high school chemistry or physics, one quarter of calculus (may be taken concurrently), and consent of instructor. Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours. Enrollment will be limited to 40 students.

The sequence of topics will be similar to that in Chemistry 1A. Calculus will be used as needed, at the level of the concurrent Mathematics 3A course.

2B. General Chemistry (Honors)

(3) Staff

Prerequisite: Chemistry 1A.

Thermodynamics, reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium. Laboratory required.

2BL. General Chemistry Laboratory (Honors)

(1) Staff

Prerequisites: Chemistry 1A-AL. (3.0 grade-point average or consent of instructor.)

Laboratory techniques. Thermodynamics, reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium.

2C. General Chemistry (Honors)

(3) Staff

Prerequisites: Chemistry 1A-B, or Chemistry 1A, 2B. Consent of instructor.

Structure and dynamics of the elements and their compounds. Aspects of technology and environmental problems. Laboratory required.

2CL. General Chemistry Laboratory (Honors)

(1) Staff

Prerequisites: Chemistry 1B, 2BL.

Laboratory techniques. Structure and dynamics of the elements and their compounds. Aspects of technology and environmental problems.

6A-B-C. Laboratory Methods of Organic Chemistry

(2-2-2) Staff

Prerequisites: for 6A: Chemistry 130A or 8A (may be taken concurrently). Chemistry 6A: lecture, 1 hour; laboratory, 4 hours. Chemistry 6B-C: laboratory, 8 hours.

Distillation, crystallization, extraction, determination of physical properties, organic synthesis, identification of organic compounds, instrumental methods in organic chemistry.

7B-C. Laboratory Methods of Organic Chemistry (Honors)

(2-2) Staff

Prerequisites: Chemistry 6A and consent of instructor.

Topics will be similar to those in Chemistry 6B-C, but with more flexible laboratory hours and more emphasis on instrumental analysis and spectroscopy for the characterization of organic compounds in conjunction with the Chemistry CS 7 course in the College of Creative Studies.

8A-B-C. Fundamentals of Organic Chemistry

(3-3-3) Gerig, Parsons, Yurkanis-Bruice

Prerequisites: Chemistry 1A-B-C. Designed primarily for biological sciences majors. Lecture, 3 hours.

Structure and reactivity of organic compounds including nomenclature, isomerism, spectroscopy, catalysis, reaction mechanisms, and stereochemistry. Application of the principles of organic chemistry to biochemical systems—carbohydrates, proteins, enzymes, vitamins, and cofactors.

10A-B-C. General Chemistry: Environmental Emphasis

(3-3-3) Staff

Prerequisites: one year of high school algebra, concurrent registration in Chemistry 10AL-10BL-10CL, or consent of instructor. Lecture, 3 hours.

An introduction to the principles and practical significance of chemical phenomena for students of the sciences.

A: Atomic structure, chemical bonding, practical chemical reactions.

B: States of matter, thermodynamics and energetics, electrochemistry.

C: Kinetics, organic and biochemical reactions.

10AL-BL-CL. General Chemistry: Environmental Emphasis Laboratory

(1-1-1) Staff

Prerequisite: concurrent registration in Chemistry 10A-B-C or consent of instructor. Laboratory, 4 hours.

Chemical analysis and properties of practical systems and samples.

20. Science and Society

(3) Kirtman

Lecture, 2 hours; discussion, 1 hour.

The role of science and technology in society as exemplified by the arms race, environmental pollution, etc., is traced from the birth of modern science through the big expansion associated with World War II and culminating in the technological-social crisis of today. (Not offered every year.)

25. Introductory Chemistry

(3) Staff

Not open to students who have completed Natural Science 1B. Lecture, 3 hours. This course is designed to meet the non-science majors's General Education requirement in the physical sciences. The course may also serve as background preparation for Chemistry 1A.

The course includes such basic topics as atomic theory, weight relations, nomenclature, chemical bonding, kinetic molecular theory, gas laws, solutions, and related areas of modern chemistry.

90FS. Freshman Seminar

(2) Miller, Anderson, Kennedy, Hooker

Seminar, 2 hours.

Informal discussion limited to 10 students in each section. Each participating faculty member will conduct one section. Subjects will include current technological and environmental problems, and recent advances in basic and applied chemistry.

91. Undergraduate Seminar

(1) Staff

Prerequisites: Chemistry 1A-B or concurrent enrollment. May be repeated once for credit. Seminar, 1 hour.

Seminars for undergraduates presented by faculty and/or students.

99. Introduction to Research

(1-3) Staff

Prerequisites: consent of instructor and undergraduate adviser. May be repeated to a maximum of six units.

Directed study, normally experimental, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research group. The student will learn basic techniques and the operation of instruments used in research. Each faculty member has a unique number designation.

UPPER DIVISION**101. Problems in Environmental Chemistry**

(3) Staff

Prerequisites: Environmental Studies 12 and 115 or one of the following: Chemistry 1B, Chemistry 25, or Natural Science 1B. Open to chemistry majors for credit but cannot be used to satisfy required chemistry electives. Lecture, 3 hours.

The chemical aspects of energy sources and their impact on the environment; the chemistry of air, water, and soil pollution; sources and methods of control; chemical dynamics in the environment; chemical quality standards and their maintenance.

113A-B-C. Physical Chemistry

(4-4-4) Bowers, Harris, Martin, Millikan, Palke, Pearson

Prerequisites: Chemistry 1A-B-C; Mathematics 3A-B-C; and Physics 1, 2, 3, 4, 3L, 4L or 6A-B-C and 6AL-BL-CL or by consent of instructor. Lecture, 3 hours; discussion, 1 hour.

A: Chemical thermodynamics: laws of thermodynamics, phase equilibria, chemical equilibria, equations of state.

B: Kinetic theory of gases, chemical kinetics, statistical mechanics, photochemistry.

C: Quantum theory and spectroscopy: introduction to quantum mechanics; symmetry, molecular structure, and spectroscopy.

113AG-BG-CG. Physical Chemistry

(4-4-4) Bowers, Harris, Martin, Millikan, Palke, Pearson

Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 113A-B-C or the respective part thereof at this institution. Lecture, 3 hours; discussion, 1 hour.

114A-B. Physical Chemistry Laboratory

(3-3) Bowers, Cowin, Martin

Prerequisites: Chemistry 150 and 150L or equivalent; Chemistry 113A concurrently with Chemistry 113B. Lecture, 1 hour; laboratory, 8 hours.

Lecture: treatment of experimental data, error analysis, instrumental data acquisition techniques, special topics. Laboratory: experiments and reports involving physical properties of gases, thermochemistry, solutions, phase equilibria, chemical kinetics, surface phenomena, molecular electric and magnetic properties, molecular spectra and structure, properties of solids, computer data analysis.

115A-B-C. Fundamentals of Quantum Chemistry

(3-3-3) Palke, Millikan, Kirtman

Prerequisites: Chemistry 113A-B-C, Mathematics 5A or consent of instructor. Lecture, 3 hours.

A: Introduction to quantum mechanics-postulatory approach; particle in box, on ring, harmonic oscillator; linear operator theory, matrix algebra; hydrogen atom; perturbation theory, variation theory; applications.

B: Molecular orbital theory and valence bond theory; Huckel theory (secular eqn.) applications to conjugated systems. Electronic spectra, and term symbols; introduction to infrared, Raman, and microwave spectroscopy.
C: Introduction to NMR, EPR, group theory; applications.

115AG-BG-CG. Fundamentals of Quantum Chemistry

(3-3-3) Millikan, Palke, Kirtman
Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 115A-B-C at this institution. Lecture, 3 hours.

117. Statistical Thermodynamics

(3) Offen, Palke, Metiu, Cowin
Prerequisites: Chemistry 113A-B-C or consent of instructor. Lecture, 3 hours.
Fundamentals of statistical thermodynamics, partition functions for ideal gases and crystals, quantum statistics, calculations of thermodynamic properties.

117G. Statistical Thermodynamics

(3) Offen, Palke, Metiu, Cowin
Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 117 at this institution. Lecture, 3 hours.

118. Photochemistry and Radiation Chemistry

(3) Martin, Millikan, Offen
Prerequisite: Chemistry 113B. Lecture, 3 hours.
Interaction of light and matter, reaction paths from electronically excited molecules, flash photolysis, high energy radiation.

118G. Photochemistry and Radiation Chemistry

(3) Martin, Millikan, Offen
Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 118 at this institution. Lecture, 3 hours.

120. Polymer Chemistry

(3) Miller
Prerequisites: Chemistry 130A-B-C. Lecture, 3 hours.
Mechanism and kinetics of polymerization: vinyl, condensation, and diene polymers; ionic polymerizations; block and graft polymers; copolymerization; physical chemistry of high polymers; polymer degradations; radiation chemistry of polymer systems.

130A-B-C. Organic Chemistry

(4-4-4) Organic Staff
Prerequisites: Chemistry 1A-B-C or consent of instructor. Chemistry 6A-B-C is to be taken concurrently. If student's major does not require 6C, then 6A-B may be deferred to winter or spring quarters. Lecture, 3 hours.
Structure, reactivity, mechanisms, synthesis, nomenclature, and spectroscopic identification of the principal classes of organic compounds as well as organometallics, amino acids, proteins, and carbohydrates. This course is intended for chemistry majors and others requiring a strong basis in organic chemistry (see majors in biochemistry-molecular biology, chemical engineering, pharmacology, physiology, and cell biology).

130AG-BG-CG. Organic Chemistry

(4-4-4) Organic Staff
Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 130A-B-C at this institution. Lecture, 3 hours.

131A-B-C. Advanced Organic Chemistry

(3-3-3) Anderson, Bunton, Rickborn, Little, Aue, Lipshutz
Prerequisites: Chemistry 130A-B-C or consent of instructor. Lecture, 3 hours.
A: Physical organic chemistry, mechanism, stereochemistry, structure, and reactivity.
B and C: Mechanism and synthesis in organic chemistry.

131AG-BG-CG. Advanced Organic Chemistry

(3-3-3) Anderson, Bunton, Rickborn, Little Aue, Lipshutz
Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 131A-B-C in this institution. Lecture, 3 hours.

134. Advanced Organic Laboratory

(3) Aue, Little
Prerequisites: Chemistry 130A and Chemistry 6A-B-C or consent of instructor. Lecture, 1 hour; laboratory, 8 hours.
Methods of organic reactions and synthesis; techniques of product isolation. (Not offered every year.)

136. Qualitative Organic Analysis

(2) Aue, Little, Rickborn
Prerequisites: Chemistry 130A-B-C and Chemistry 6A-B-C, or consent of instructor. Lecture, 2 hours.
Identification of unknown organic compounds; separation of mixtures; derivatives, instrumental methods; microtechniques.

136L. Qualitative Organic Analysis Laboratory

(2) Aue, Rickborn,
Prerequisite: concurrent enrollment in Chemistry 136. Laboratory, 8 hours.

137. Organometallics in Organic Synthesis

(3) Kaska
Prerequisites: Chemistry 130A-B-C. Lecture, 3 hours.
A study of the synthesis of organic compounds where the starting material or intermediate is a substance having a carbon-metal bond.

141. Bio-Organic Reactions

(3) Bruice
Prerequisites: Chemistry 130A-B-C, Chemistry 113A-B-C, or consent of instructor. Biology 108 is recommended. Lecture, 3 hours.
A lecture course in bio-organic mechanisms. The types of chemical transformations of importance in biochemical reactions will be discussed from a physical organic point of view. Mechanisms of nucleophilic displacement reactions on carbonyl and pentavalent phosphorous, hydration reactions, chemical reactions of cofactors, enzymic catalysis, and enzyme models are among the topics considered.

142A-B-C. Chemical Aspects of Biological Systems

(3-3-3) Bruice, Parsons, Yurkanis-Bruice
Prerequisite: Chemistry 130C or consent of instructor. Lecture, 3 hours.
A: Macromolecules of biological importance. A survey of the physical and chemical properties of proteins, nucleic acids, and carbohydrates. Methods of preparation, chemical synthesis, degradation, and characterization of biomolecules.
B: Chemical aspects of intermediary metabolism. The chemistry and elementary dynamic properties of enzymes; study of enzyme active sites; characterization of metabolic pathways and methods of examining cellular regulation.
C: Macromolecular biosynthesis and specialized cellular processes. A survey of nucleic

acid and protein biosynthesis, characterization of lipids and membranes; function of membranes in transport, energy transduction, and cellular control; mechanisms of muscle contraction and cell motility.

142AG-BG-CG. Chemical Aspects of Biological Systems

(3-3-3) Bruice, Parsons, Yurkanis-Bruice
Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 142A-B-C or the respective part thereof at this institution. Lecture, 3 hours.

150. Analytical Chemistry

(3) Kennedy
Prerequisites: Chemistry 1A-B-C or consent of instructor. Lecture, 3 hours.
Principles of analytical chemistry including classical techniques, spectrophotometry, electroanalytical techniques, and separation processes. Library research report.

150L. Analytical Chemistry Laboratory

(3) Kennedy
Prerequisite: concurrent enrollment in Chemistry 150 or consent of instructor. Laboratory, 8 hours.
Students will perform experiments in several areas of analytical chemistry including gravimetric, volumetric, electroanalytical, spectrophotometric, and separation techniques. Analyses of water, blood, consumer products, and industrial alloys are carried out.

151. Advanced Analytical Chemistry

(3) Kennedy
Prerequisite: Chemistry 150. Lecture, 3 hours.
A detailed discussion of principles of analytical chemistry with emphasis on acid-base and redox equilibria, and on separations. (Not offered every year.)

153. Advanced Analytical Techniques

(3) Staff
Prerequisite: Chemistry 150 or consent of instructor. Lecture, 2 hours; laboratory, 3 hours.
Principles of analytical methodology, as in spectroscopy, electronanalysis, and chromatography. Applications to environmental problems, forensic and clinical analysis, and industry. The laboratory will require the analysis of an environmental sample by two or more methods.

173A. Advanced Inorganic Chemistry

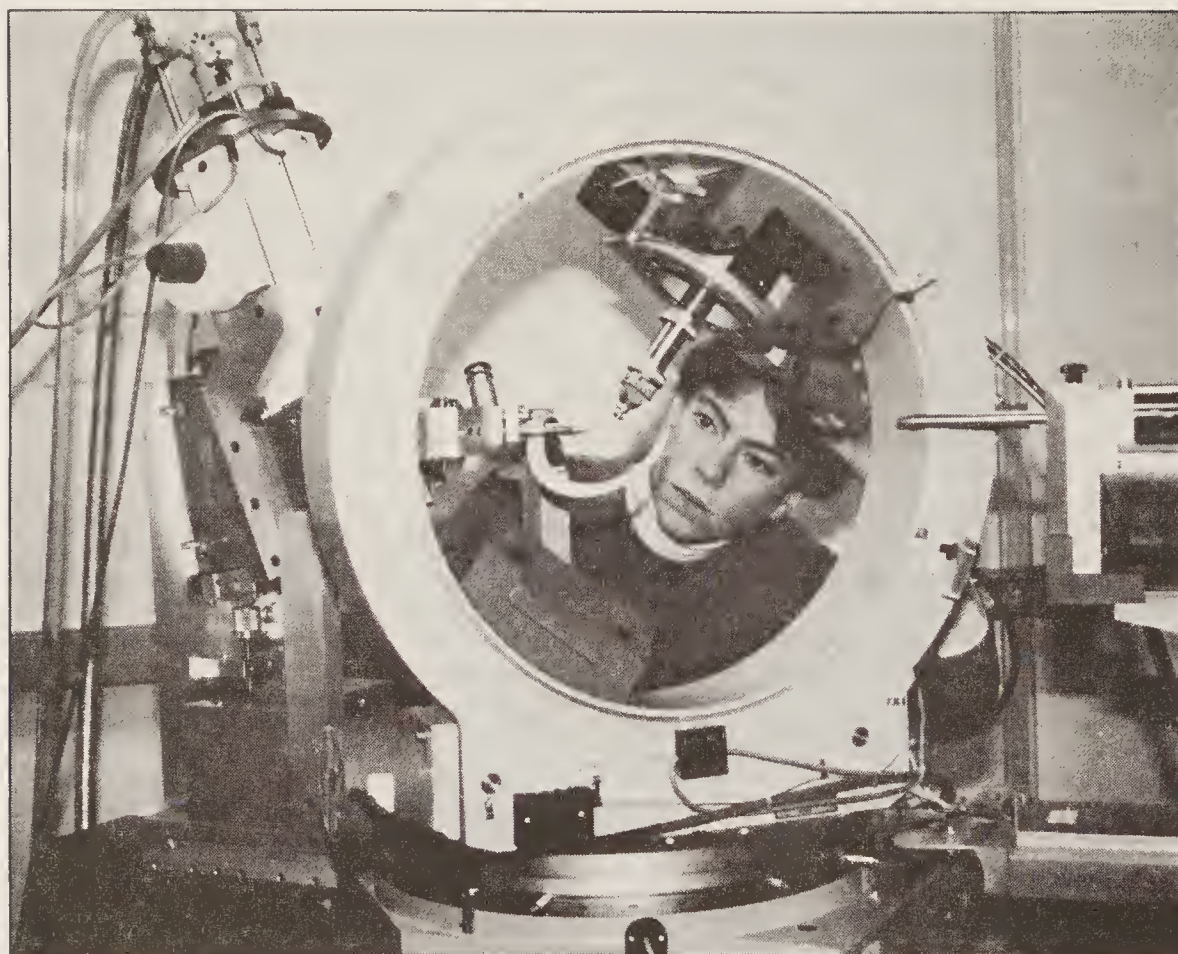
(3) Staff
Prerequisites: Chemistry 113A-B-C or consent of instructor. Lecture, 3 hours.
Inorganic and organometallic chemistry of the nontransition elements and their compounds: descriptive reaction chemistry, bonding theory, stereochemistry, and introductory spectroscopy.

173B. Advanced Inorganic Chemistry

(3) Staff
Prerequisites: Chemistry 113A-B-C and 173A, or consent of instructor. Lecture, 3 hours.
Inorganic and organometallic chemistry of the transition metals and their complexes: introductory ligand field theory and spectroscopy, descriptive chemistry, and reaction mechanisms.

174. Advanced Inorganic Synthesis and Laboratory Techniques

(3) Kaska
Prerequisite: Chemistry 173 (may be taken concurrently) or consent of instructor. Lecture, 1 hour; laboratory, 8 hours.
Methods of inorganic synthesis such as the synthesis of transition metal complexes, organometallics, and bioinorganic compounds. Spectroscopic characterization of compounds.



Crystallographer Nancy Keder adjusts the alignment of a sample on this single-crystal X-ray diffractometer. When X-rays are beamed at samples of crystalline compounds glued onto a glass fiber in the center of the circular arm, the rays are diffracted and form patterns that can be used to determine the molecular structure of the compounds.

175. Physical-Inorganic Chemistry

(3) Watts, Ford, Pearson

Prerequisites: Chemistry 173A-B or consent of instructor. Lecture, 3 hours.

Bonding theory, thermodynamics, and structure of inorganic compounds. Applications of physical techniques to the study of inorganic (and organometallic) reactions and their mechanisms.

175G. Physical-Inorganic Chemistry

(3) Watts, Ford, Pearson

Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 175 at this institution. Lecture, 3 hours.

176. Inorganic Chemistry of Solar Energy Conversion

(3) Ford, Kennedy, Watts

Prerequisites: Chemistry 113A-B. Lecture, 3 hours.

Survey of applications of basic principles of physical chemistry, photochemistry, and electrochemistry to solar energy conversion processes. Selected systems designed to convert solar energy to chemical fuel, electricity, and heat will be treated in detail during the survey.

176G. Inorganic Chemistry of Solar Energy Conversion

(3) Ford, Kennedy, Watts

Prerequisites: Chemistry 113A-B. Lecture, 3 hours.

Survey of applications of basic principles of physical chemistry, photochemistry, and electrochemistry to solar energy conversion processes. Selected systems designed to convert solar energy to chemical fuel, electricity, and heat will be treated in detail during the survey.

184. Chemical Literature

(2) Staff

Prerequisites: 12 units of Chemistry. Lecture, 2 hours.

Lectures and exercises on the literature and other information resources of use in chemistry.

184G. Chemical Literature

(2) Staff

Prerequisite: open only by consent of the chemistry graduate adviser to graduate students who have not taken Chemistry 184 at this institution. Lecture, 2 hours.

Lecture and exercises on the literature and other information resources of use in chemistry.

195AA-ZZ. Chemical Instrumentation

(3-5) Staff

Prerequisites: consent of instructor and undergraduate adviser. This course may be used to satisfy the upper-division laboratory requirement. Discussion, 1 hour; laboratory, 6 to 12 hours.

With guidance from a faculty member the student will learn advanced laboratory techniques by independent experimental work and weekly consultations with the instructor. Each faculty member has a unique number designation.

196AA-ZZ. Special Courses

(1-4) Staff

To be taken with the consent of the instructor and the undergraduate adviser of the department as a means of meeting special curricular problems. Each faculty member has a unique number designation.

199AA-ZZ. Independent Studies in Chemistry

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three

quarters; 3) have completed at least two upper-division courses in chemistry. Students are limited to five units per quarter and 30 units in all 198/199 courses combined. Consent of both instructor and undergraduate adviser required.

Directed study, normally experimental, to be arranged with individual faculty members. Each faculty member has a unique number designation.

GRADUATE COURSES

211. Chemical Kinetics

(3) Pearson

Prerequisite: consent of instructor. Lecture, 3 hours.

A course in the laws and theories governing rates of chemical reactions and reaction mechanisms. Empirical treatment of reaction rates, treatment of data, gas-phase reactions, reactions in solution, catalysis, complex reactions, chain reactions. Collision theory and potential energy surfaces.

212. Chemical Dynamics

(3) Martin, Cowin

Prerequisite: consent of instructor. Lecture, 3 hours.

Dynamics of molecular collisions and elementary chemical reactions, including elastic and inelastic collisions, potential energy surfaces, reactive scattering, state specific reaction cross sections, reagent state preparation and product state analysis, molecular beam and laser techniques in chemical dynamics. (Normally offered in alternate years.)

214A-B. Statistical Mechanics

(3-3) Metiu

Prerequisite: consent of instructor. Course content changes and the course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in advanced statistical mechanics. Critical phenomena and renormalization group theory. Correlation functions and response functions with applications to light, electron, neutron, and atom scattering from solids to liquids. Time dependent statistical mechanics with applications to relaxation phenomena. Stochastic methods.

215A-B. Quantum Mechanics

(3-3) Metiu, Palke

Prerequisite: consent of instructor. Course content changes each year and may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in advanced quantum mechanics. Scattering theory with applications to potential scattering, electron scattering, and chemical reactions. Quantum theory of light and its interaction with matter. Molecular spectroscopy. Electronic structure calculations.

219. Selected Topics in Physical Chemistry

(1-4) Staff

Prerequisite: consent of instructor. Course may be repeated with a different topic (18 units maximum). Lecture, 1 to 4 hours.

Selected topics: orbital symmetry rules for chemical reactions (Pearson); classical theory of light, radiation, and spectroscopy (Metiu); nonlinear optics and nonlinear spectroscopy (Metiu).

220. Surface Chemical Physics

(3) Cowin

Prerequisite: consent of instructor.

Interactions of molecules with surfaces with emphasis on energy transfer. Condensation/evaporation, dissociation, internal energy transfer. Surface bonding and surface catalysis. Includes discussion of important surface instrumentation methods.

230. Modern Instrumental Techniques in Organic Chemistry

(3) Staff

Prerequisite: graduate standing or consent of instructor. Lecture, 3 hours.

Practical spectroscopy including infrared and ultraviolet, but with primary emphasis on nuclear magnetic resonance, electron spin resonance, and mass spectroscopy. (Not offered every year.)

231. Advanced Physical Organic Chemistry

(3) Bunton

Prerequisite: consent of instructor. Lecture, 3 hours.

Study of the structural and environmental factors which influence the course of chemical reactions of organic compounds.

233. Advanced Synthetic Chemistry

(3) Aue, Rickborn, Lipshutz

Prerequisite: consent of instructor. Lecture, 3 hours.

A comprehensive discussion of modern synthetic organic methods, including the applications of addition, condensation, substitution, and rearrangement reactions. (Not offered every year.)

236. Molecular Orbital Theory

(3) Staff

Prerequisite: graduate standing or consent of instructor. Lecture, 3 hours.

Applications of molecular orbital theory to organic chemistry. (Not offered every year.)

238. Selected Topics in Natural Products

(3) Lipshutz, Little

Prerequisite: consent of instructor. Course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in natural products. The contents of this course will vary.

239. Selected Topics in Organic Chemistry

(1-4) Staff

Prerequisite: consent of instructor. Course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

Selected topics in organic chemistry. The contents of this course will vary.

250. Seminar in Biological Chemistry

(2) Staff

Prerequisite: consent of instructor. May be substituted for Chemistry 290 requirement. Lecture, 2 hours.

Presentation of seminar in the areas of biophysical, bio-organic, or biological chemistry.

252. Enzyme Dynamics

(3) Staff

Prerequisites: Chemistry 142A-B-C or consent of instructor. Lecture, 3 hours.

Study of the dynamics of reactions involving biological macromolecules. A kinetic approach to enzyme mechanisms and enzyme-macromolecule interactions.

254A-B. Magnetic Resonance Techniques in Biological Systems

(3-3) Gerig

Prerequisite: consent of instructor. Lecture, 3 hours.

A discussion of the theory and practice of magnetic resonance methods currently used in studies of proteins, nucleic acids, and polysaccharides both individually and in complex structures such as membranes. NMR and EPR techniques will be included but the emphasis will be on high-resolution ^1H and ^{13}C spectroscopy. (Normally offered in alternate years.)

255A-B-C. Methods in the Characterization of Biological Macromolecules

(3-3-3) Hooker, Gerig

Prerequisites: physical chemistry, biochemistry, calculus, or consent of instructor. Lecture, 2 hours; discussion, 1 hour.

A: Introduction to biophysical chemistry. Macromolecular structure and conformation, intermolecular interactions, and multiple equilibria. B: Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence and phosphorescence, NMR, and ESR. C: Theory and practice of physical methods employed to study macromolecules. Hydrodynamic properties, including sedimentation, diffusion, viscosity, osmotic pressure.

258. Mechanisms of Organic and Enzymatic Reactions

(3) Bruice

Prerequisite: consent of instructor. Lecture, 3 hours.

Formal presentation of seminars on recent literature dealing with mechanisms of organic and enzymatic reactions accompanied by open discussion of the topics considered.

259. Selected Topics in Biological Chemistry

(1-4) Staff

Prerequisite: consent of instructor. Course may be repeated with a different topic (18 units maximum). Lecture, 1 to 4 hours.

Selected topics from bio-organic, biophysical, or biological chemistry. The contents of this course will vary.

260. Research Seminar in Biochemistry-Molecular Biology

(1) Faculty of biological sciences and chemistry

Prerequisite: graduate status.

Seminars presented by faculty of the chemistry department and the molecular biology-biochemistry section of biological sciences. Current research topics.

261A-B-C. Enzyme Mechanisms

(3-3-3) Bruice, Parsons

Prerequisites: Chemistry 142A-B-C or consent of instructor. Lecture, 3 hours.

Presentation of the chemistry, structure, and function of enzymes followed by discussion of pertinent organic model systems relating to the specific enzymes. (Normally offered in alternate years.)

273. Structural Inorganic Chemistry

(3) Staff

Prerequisite: consent of instructor. Lecture, 3 hours.

Molecular aggregation and structural analysis. Theories of properties and experimental determination of structure; applications to solid state chemistry; heterogeneous catalysis. (Not offered every year.)

279. Selected Topics in Inorganic Chemistry

(1-4) Staff

Prerequisite: consent of instructor. Course may be repeated with a different topic (18 units maximum). Lecture, 3 hours.

This course is designed to reflect recent developments in inorganic chemistry.

280. Selected Topics in Analytical Chemistry

(1-4) Staff

Prerequisite: consent of instructor. Course may be repeated with a different topic (16 units maximum). Lecture, 3 hours.

Selected topics from analytical chemistry. The content of this course will vary. "Electrochemistry;" (Hubbard/Kennedy). Additional topic titles will be added as they become available.

284. Chemical Literature

(2) Staff

Prerequisite: consent of the chemistry graduate adviser only. Lecture, 3 hours.

Lectures and exercises on the literature and other information resources of use in chemistry.

290. Seminar in Chemistry

(2) Staff

Prerequisite: consent of instructor. May be repeated. Lecture, 1 hour.

Presentation of seminar required of all chemistry graduate students.

291AA-ZZ. Special Seminar in Chemistry

(2) Staff

Prerequisite consent of instructor. May be repeated. Lecture, 1 hour.

Specialized seminar topics. Each faculty member has a unique number designation.

293. Faculty Research Seminar

(2) Staff

Prerequisite: consent of instructor. Seminar, 2 hours.

A series of seminars by department faculty describing their active research projects.

501A-B-C. Techniques of Teaching and Laboratory Class Supervision

(2-2-2) Anderson

Prerequisite: graduate standing. S/U grade. Discussion, 1 hour.

An initial two-three day workshop is followed by weekly discussion. Topics covered: laboratory organization, supervising experiments, safety, presentations, leading discussions, writing quizzes, advising, and grading. Aimed at new teaching assistants.

593. Preparation for Organic Cumulative Examinations

(2) Staff

Discussion of (a) the solutions to cumulative examinations; (b) how to prepare for cumulative examinations; (c) problems in reaction mechanisms and organic synthesis.

594AA-ZZ. Special Topics

(1-4) Staff

Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies

(2) Staff

Lecture, 2 hours.

Critical review of research in selected fields. Regular meetings are held in which the student presents for discussion information from the recent chemical literature.

596. Directed Reading and Research

(2-12) Staff

No more than half the units necessary for the master's degree may be taken in Chemistry 596.

Individual tutorial. Instructor usually the student's major professor. A written proposal for each tutorial must be approved by the department chair. Each faculty member has a unique number designation.

597AA-ZZ. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-3) Staff

No unit credit allowed toward advanced degree(s). S/U grade.

Instructor should be the student's major professor or chair of the doctoral committee.

598AA-ZZ. Master's Thesis Research and Preparation

(1-12) Staff

No unit credit allowed toward advanced degree. S/U grade.

Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

599AA-ZZ. Ph.D. Dissertation Research and Preparation

(1-12) Staff

S/U Grade

Only for research underlying the dissertation, writing the dissertation. Instructor should be the chair of the student's doctoral committee.

Chicano Studies

Department of Chicano Studies, Phelps Hall 1315; Telephone (805) 961-3012. Department Chair: Mario T. Garcia.

Faculty

Yolanda Broyles-Gonzalez, Ph.D., Stanford University, Associate Professor (*dramatic literature and performance, oral tradition, comparative literature, German studies*)
 Ramon Favela, Ph.D., University of Texas at Austin. Assistant Professor (*art history*)
 Mario T. Garcia, Ph.D., UC San Diego, Professor (*history*)
 Francisco Lomeli, Ph.D., University of New Mexico, Associate Professor (*literature*)
 Guadalupe San Miguel, Ph.D., Stanford University, Associate Professor (*education*)
 Denise Segura, Ph.D., UC Berkeley, Assistant Professor (*sociology*)

The Department of Chicano Studies offers an interdisciplinary program that examines the diversity of the Chicano experience through the social and behavioral sciences and humanities. In seeking to understand the Chicano experience, the department offers instruction in significant periods of Mexican and southwestern U.S. history and probes the roots of a tradition beginning with the pre-Columbian cultures of Mexico and branching into many areas of contemporary U.S. society.

The academic objectives of the department are twofold: to meet the educational and cultural needs of students, and to foster understanding in the larger community of Chicano affairs and concerns. The department curriculum stresses the bicultural and bilingual nature of Chicano society, and the program provides an opportunity for students to plan and develop their course of study.

The major is recommended for those planning professional careers of special importance for the Chicano community, such as law, the health services, social services, and education. After completing specific prerequisites, students with a degree in Chicano Studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as early as possible with the credential adviser in the Graduate School of Education.

There are several sources of information and academic advising within the Department of Chicano Studies. One of the faculty acts as general undergraduate adviser and answers specific questions about the major, transfer credits, course substitutions, course waivers, and other academic problems. The department also provides an information sheet for undergraduate majors and a listing of courses to be offered each quarter. A complete academic file is kept in the department office for each student in the Chicano Studies major. An up-to-date major requirement list and other handouts pertaining to the Chicano Studies major are also available.

Bachelor of Arts—Chicano Studies

Preparation for the major. Chicano Studies 1A-B-C, Chicano Studies 12, Spanish 6 (or equivalent by examination).

Upper-division major. Forty upper-division units emphasizing four sub-areas selected as follows. Up to twelve units may be taken outside the department:

- A. History—Three courses (12 units), including two courses from Chicano Studies 168A-B (same as History 168A-B) and 130A; and one course from Chicano Studies 105, 168Q, 189; History 151A-B-C, 152A-B-C, 156A-B, 158.
- B. Humanities—Three courses (12 units), including two courses from Chicano Studies 137, 138, 139, 140, 141, 143, 145, 146, 180, 181, 187, 188A-B-C, 190, 195; and one course from Chicano Studies 142; Religious Studies 114B; Art History 154C, 161D, 161E; Spanish 106, 108A-B-C, 109, 127, 136, 138, 178, 180.
- C. Social Science—Three courses (12 units), including two courses from Chicano Studies 106, 115, 120, 130B, 131, 140, 144 (same as Sociology 144), 154F (same as Sociology 154F), 155R (same as Sociology 155R), 155W (same as Sociology 155W), 170A-B, 174, 175, 178, 197; and one course from Chicano Studies 147, 164, 171, 194; Anthropology 133, 134, 135, 137, 141, 148A, 175, 190; Political Science 132, 134, 148A-B, 174; Sociology 128, 129, 134.
- D. Research/Methods—One course (4 units), selected from Chicano Studies 102A-B, 110, 191D, 192, 193, 196.

A maximum of 4 units of Chicano Studies 191AA-ZZ may be applied to Area A or B or C above, as appropriate, by petition. Upper-division courses from other academic departments may be accepted toward the major by petition to the department chair.

CHICANO STUDIES COURSES

LOWER DIVISION**1A-B-C. Introduction to Chicano Studies**

(4-4-4) Staff

An introduction to the historical and contemporary development of the Chicano community, interdisciplinary in nature, and focusing upon such

components as the educational, sociological, and political. The course will critically analyze the societal context in which La Raza has sought to maintain and develop its culture. (F,W,S)

9. Introduction to Chicano History

(4) Garcia

Prerequisite: lower-division standing.

The historical heritage of the Chicano from Indian and Spanish origins to the contemporary period. Particular stress will be placed on the interpretation and analysis between key periods in world and U.S. history to the experience of Chicanos.

12. Introduction to Chicano Spanish

(4) Lomeli

Prerequisites: consent of instructor and some basic knowledge of Spanish.

The course will introduce students to the Spanish language and help them to acquire oral and written skills, distinguish between standard speech of popular variants, and learn the Chicano Spanish lexicon.

UPPER DIVISION**102A-B. Quantitative Research and Issues in Chicano Studies**

(4-4) Staff

This two-quarter course sequence examines quantitative research problems in Chicano Studies. The emphasis is on the effective use of social survey data in formulating public and private policy. Students also receive an introduction to the computer as a research tool.

105. Twentieth-Century Chicano History

(4) Garcia

A history of the Chicano since 1900, with an emphasis on recent political, economic, and social developments.

106. Introduction to Latin American Studies

(4) Staff

Prerequisite: any quarter of Chicano Studies 1A, 1B, or 1C, or History 8, or upper-division standing.

The Latin American heritage of Chicanos will be explored from various interdisciplinary perspectives: history, culture, literature, politics, and education. Stress will be placed on major past and contemporary cultural, political, and social movements from the pre-Columbian past to the twentieth century.

110. Research Methods in Chicano Studies

(4) Staff

Prerequisites: Chicano Studies 1A-B-C.

Using Chicano studies topics, the course will introduce students to: (1) the epistemology of scientific inquiry (its history and contemporary movements); (2) the strengths and weaknesses of quantitative and qualitative methodologies; and (3) the mechanisms of research design (transforming an idea into a research plan).

115. Psychological Issues and the Chicano Child

(4) Staff

To give the student an understanding of the fundamentals of psychology; to introduce the fundamentals of child psychology; and to analyze and discuss pertinent psychological principles and research related to the Chicano child. (F,SS)

120. Bilingualism and the Chicano

(4) Staff

Prerequisite: consent of instructor.

An introduction to the study of bilingualism and the Chicano. The course will focus on the sociolinguistic and educational implications of bilingualism.

121. Writing Experience for Bilinguals

(4) Staff

Prerequisite: consent of instructor.

A comparative analysis between Chicano Spanish, standard Spanish, and vocabulary building.

130A. Education of Chicanos: A Historical Perspective

(4) San Miguel

Prerequisite: Chicano Studies 1A or 1B or upper-division standing.

This lecture course is aimed at providing an overview of the education provided for Chicanos from 1848 to the present. It provides an understanding of the origins, development, and status of public education for Chicano children in the Southwest.

130B. The Chicano Quest for Educational Equality

(4) San Miguel

Prerequisite: Chicano Studies 1A or 1B or 130A or upper-division standing.

This lecture course traces the legal, administrative, and political efforts made by Chicanos to secure more and better education for their children. It also assesses its impact and influence on the public schools.

131. An Introduction to Issues in Chicano Bilingual Education

(4) San Miguel

This is an introduction to bilingual education and its effect on Chicanos. Specific issues include the evolution and development of policy at the federal and state levels, theory and practice of bilingual education pertaining to Chicanos, the status and future of this program.

137. Chicano/Mexican Oral Traditions

(4) Broyles Gonzalez

Prerequisites: upper-division standing and knowledge of Spanish and English.

The course will introduce students to the ancient roots of Chicano oral traditions. Contemporary forms of Chicano oral poetry, oral narrative, and drama will be examined, in addition to more ephemeral forms such as cabala, choteo, joke-telling, or dichos.

138. Barrio Popular Culture

(4) Broyles Gonzalez

Prerequisite: upper-division standing.

The course will explore various manifestations of popular and mass culture in Chicano urban and semi-rural communities throughout the southwest. Both secular and religious cultural phenomena will be analyzed (lowriders, saints, music, etc.). Relationships to mainstream culture will be examined.

139. Native American Heritage and Chicano Cultural Renaissance

(4) Broyles Gonzalez

Prerequisite: upper-division standing or Chicano Studies 1A, 1B, or 1C.

The course will explore the intense recourse to the Native American heritage during the Chicano cultural renaissance of the 1960s and 1970s. The rediscovery of the native ancestral cultures will be analyzed in poetry, prose, drama, the graphic arts.

140. The Mexican Cultural Heritage of the Chicano

(4) Staff

Prerequisite: consent of instructor.

A panoramic view of present-day Chicano traditions analyzed from a Mexican cultural heritage perspective in order to comprehend and appreciate the uniqueness and difference of present-day Chicano culture, its achievements, and contribution to the overall American culture.

141. Roots of Chicano Culture in Interdisciplinary Perspective

(4) Staff

Prerequisites: upper-division standing; two or more upper-division courses in sociology, religious studies, or anthropology.

This course will give students a general understanding of the origins, development, and contemporary variation in Chicano culture from an interdisciplinary approach.

142. An Introduction to Chicano and Barrio Art

(4) Staff

An introduction to Chicano and barrio art and their major exponents. This course will emphasize Mexican mural painting as forerunner of Chicano mural art.

143. Chicano/Mexican Film Studies

(4) Lomeli, Staff

Study of Chicano and Mexican cinema to view film as an art form and projection of the filmmaker. Techniques, messages, and ideology stressed as instruments which propose film truth within the context of Chicano and Mexican social experience.

144. The Chicano Community

(4) Staff

Prerequisite: upper-division standing, or Chicano Studies 1A, 1B, or 1C, or a prior course in sociology. This course is the same as Sociology 144.

Origins of the Chicano in rural Mexico; context of contact; patterns of settlement in the United States; the Chicano community, social structure, and social change; acculturation and generational patterns; community leadership and change.

145. Chicano Art: Symbol and Meaning

(4) Favela

Prerequisite: any quarter of Chicano Studies 1A, 1B, or 1C, Chicano Studies 142 or Art History 1 or 7E, Art History 161C, 161D, or 161E, or upper-division standing.

This course traces the sources and historical development of symbols and forms that originated in the art of New Spain and Mexico and became crucial for the development of a contemporary Chicano art. Emphasis is given to artistic conceptions of American and Aztlán by Mexican, Mexican American, and Chicano artists.

146. Parallels in Mexican and Chicano Art

(4) Favela

A study of Mexican art in Mexico and Chicano art in the United States (1920s-1950s). Special emphasis on the Southwest, Pacific Coast, and Great Lakes region since 1970: form, content purpose, and significance.

147. Chicanos and the Film Media: A Comparative History

(4) Staff

This course examines the various ways Chicanos have been portrayed in Hollywood films. Their characterizations are contrasted with the portrayals of women, Blacks, Jews, gays, and lesbians. The content is chronological and thematic in its examination of recurrent minority images.

154F. The Chicano Family

(4) Staff

Prerequisites: upper-division standing or Chicano Studies 1A-B-C or consent of instructor or prior course in sociology. Same course as Sociology 154F.

This course provides an overview of historical and contemporary research on Chicano families in the United States. Changing viewpoints on the character of Chicano families and their implications with respect to policy issues are examined.

155R. Chicana Research Issues

(4) Staff

Prerequisites: upper-division standing or Chicano Studies 1A-B-C or consent of instructor or prior course in sociology. Same course as Sociology 155R.

This course is designed to enable students to develop and implement a research project that explores in depth one or more facets of the Chicana experience. Students will select and gather information in one area of interest such as: family, health, education, or employment.

155W. La Chicana: Mexican Women in the U.S.

(4) Staff

Prerequisites: upper-division standing or Chicano Studies 1A-B-C or consent of instructor or prior course in sociology. Same course as Sociology 155W. Not open for credit to students who have received credit for Chicano Studies 150A, 150B, or 150C.

Examines existing research on native-born and immigrant Mexican women in the United States with emphasis on family, education, employment, and politics. Analysis of the Chicana experience organized by considering how interplay between class, race, and gender affects access to opportunity and equality.

164. Chicanos and the Administration of Justice

(4) Staff

A survey of police-barrio community relations including the role of police, police department theories and tactics, and the unique police problems of the Chicano community. In addition, the course will examine the organization of courts and the procedural issues and suggested reforms involved in the adversary system, from arrest to penal institutions.

168A-B. History of the Chicano

(4-4) Staff

Prerequisite: any quarter of History 17A-B-C or any quarter of Chicano Studies 1A-B-C or upper-division standing. Same course as History 168A-B.

The history of the Chicanos, 1821 to the present; traces the sociocultural lifeline of the Mexicans who have lived north of Mexico.

169. Comparative Local History

(4) Staff

This course analyzes local and regional history of Chicanos. Theories and methodologies of social, urban, and oral history will be examined. Public history programs for Chicano communities will be discussed. Students will develop a research prospectus for their research projects.

170A. Chicano Community Organizations

(4) Staff

The day-to-day operations and success of contemporary Chicano community organizations is socio-historically analyzed. Emphasis is placed on whether particular organizations meet the actual or perceived needs of the Chicano community or of special interest groups within the community.

170B. Chicano Community Organizations

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

The theory of organizing within the Chicano community will be analyzed through field observations of currently operating Chicano community organizations.

171. The Chicano Urban Experience

(4) Staff

Prerequisite: upper-division standing.

This course traces the transition of Chicanos from a rural to urban population and examines trends in family size, language usage, segregation, and social inequality among Chicanos residing in cities. Issues of urban decay and community conflict are also examined.

172. Legal Issues in the Chicano Community

(4) Staff

Prerequisite: consent of instructor.

Survey of recent state and federal laws and court decisions affecting the Chicano community. Special consideration will be given to landmark cases and decisions. Analysis will be made of opposing views on each case in a historical context.

174. Chicano Politics

(4) Staff

Prerequisite: upper-division standing. Same course as Political Science 174.

Political life in the barrio, political behavior of the Chicano community, and representation of Chicanos by elected officials and interest groups.

175. Comparative Ethnic Movements

(4) Staff

The purpose of this course is to examine the structural forces which strengthen ethnic identification and promote ethnic politics within the United States and other nations. Although the Chicano movement will be the central focus, various ethnic movements will be examined.

178. Theories of Social Changes and Chicano Society

(4) Staff

This course will examine the dynamics of social change and its impact on the Chicano community. Students will acquire a general understanding of basic theories and an introduction to the social structure and processes of change (urbanization, social mobility, etc.)

180. Survey of Chicano Literature

(4) Lomeli

The purpose of this course is to provide the student with a general overview of all the literature written by Chicanos by covering all genres: poetry, novel, theatre, short story, and essay. The course aims to portray a people's experience through literature and show how that experience is manifested in a given work.

181. The Chicano Novel

(4) Lomeli

Reading, analysis, and critique of the contemporary Chicano novel as it pertains to the Chicano experience.

186A-B. Music/Dance of the Chicanos

(4-4) Staff

A historical perspective of Mexican and Chicano music and dance with emphasis on the indigenous cultures and other contributing cultural elements which combine to form traditional and contemporary Chicano music and dance.

187. Introduction to Chicano Theater and Performance

(4) Broyles Gonzalez

Prerequisite: upper-division standing.

A survey of the major Chicano theater and performance forms ranging from the traditional to the avant-garde contemporary. The diverse forms of performance will be studied as art forms and with regard to their respective social functions within Chicano communities.

188A. Chicano Theater: Origins to 1970

(4) Broyles Gonzalez

Prerequisites: upper-division standing or Chicano Studies 1A, 1B, or 1C, or any lower-division drama course such as Dramatic Art 60 or 60S.

Survey of the origins and development of borderlands theater, from native ritual and Indian-Hispano antecedents to today's Chicano forms. The genesis of Chicano theater will also be studied in relationship to Chicano culture and history.

188B. Contemporary Chicano Theater

(4) Broyles Gonzalez

Prerequisite: upper-division standing or Chicano Studies 1A, 1B, or 1C, Chicano Studies 188A, or any lower-division drama course such as Dramatic Art 60 or 60S.

An analysis of contemporary Chicano forms of theatrical expression, ranging from barrio performances to mainstream commercial productions. The creation and presentation of Chicano dramatic forms will be analyzed in relationship to economic and historical realities affecting them.

188C. Chicano Theater Workshop

(4) Staff

Prerequisites: Chicano Studies 188A or 188B or consent of instructor, knowledge of Spanish and English.

Reading and analysis of contemporary bilingual Chicano plays, in conjunction with acting and technical training. A dramatic piece will be rehearsed and performed.

189. Immigration and the U.S. Border

(4) Garcia

Prerequisite: upper-division standing or consent of instructor.

An analysis of the socioeconomic and political factors which have determined and continue to form the basis for the development of United States immigration policies and practices toward Mexico and the U.S.-Mexican border.

190. Introduction to Chicano Poetry and Short Story

(4) Lomeli

Reading and appreciation of Chicano poetry and poets. Analysis and critique of the Chicano short story with discussions on the realities and values presented on the Chicano experience and universe by the author.

191AA-ZZ. Special Topics in Chicano Studies

(4) Staff

Course may be taken up to three times (12 units) providing the letter designations are different.

Designed to allow courses of varying topics in areas of expertise of visiting professors to broaden opportunities for students. Examples might be: immigration, Native American, Mexican, or Latin American influences on the Chicano, legal issues, the migrants.

192. Field Research

(4-8) Staff

*Prerequisites: lower-level ethnic studies; sociology and/or anthropology course work; open only to juniors and seniors; consent of**instructor. Eight units maximum may be applied to major.*

Internship in contemporary urban problems and decision-making processes as they affect the Chicano. Internship based on directed research through observation, participation, and relevant readings. Student individually assigned, instructed, and supervised in fieldwork involving practical experience in decision-making unit of local governmental social service agencies, or of community liaison agencies. (F,W,S)

193. Undergraduate Seminar

(4) Staff

Prerequisites: two courses in Chicano Studies, consent of instructor prior to enrollment and upper-division standing. To be offered intermittently.

Special topics in Chicano Studies.

194. Seminar: The Chicano Worker

(4) Staff

Prerequisite: consent of instructor.

A comparative analysis of the economic status of Chicanos. Special attention is given to the employment situation of Chicanas, Chicano youths, and Mexican immigrants. Key topics are job and industry concentration, income, unemployment, and under-employment

195. Seminar: Problems in the History of Chicano Art

(4) Favela

Prerequisites: either Chicano Studies 145 or 146; upper-division standing and consent of instructor.

A definition of Chicano art will form the focus of this seminar. Students will conduct primary research and analyze pluralistic facets of Chicano art, artists, and art criticism within the context of mainstream American art and culture.

196. Practicum: Analysis of Chicano Survey Data

(4) Staff

Prerequisite: upper-division standing.

The course allows students an opportunity to conduct their own research project. With instructor supervision, students will formulate and execute (through use of the computer) an analysis of data from an existing Chicano survey.

197. Special Topics Seminar: Education of the Chicano Child

(4) San Miguel

Survey of the relationship between the schools and the Chicano child. Also included will be information on theories, methods, and resources necessary for developing and evaluating effective teaching strategies in meeting the educational needs.

198. Readings in Chicano Studies

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Chicano Studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Readings in Chicano studies under the guidance of a faculty member in the department. Students must prepare a short plan of study and have it approved by the sponsoring faculty member.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Chicano Studies. Students are limited to five units per quarter

and 30 units total in all 198/199 courses combined.

Classics

**Department of Classics, South Hall 4631;
Telephone (805) 961-3556. Department Chair:
Robert Renehan.**

Faculty

- Apostolos N. Athanassakis, Ph.D., University of Pennsylvania, Professor (*Greek poetry, classical linguistics*)
Alva W. Bennett, Ph.D., UC Berkeley, Associate Professor (*Latin literature, poetry*)
Howard W. Clarke, Ph.D., Harvard University, Professor (*epic, comparative literature*)
Borimir Jordan, Ph.D., UC Berkeley, Professor (*philology, epigraphy, history, religion*)
Joseph Margon, Ph.D., University of Southern California, Professor (*Greek drama, Latin prose, literary criticism*)
Robert Renehan, Ph.D., Harvard University, Professor (*Greek and Latin literature, textual criticism, Greek philosophy and medicine*)
Jo-Ann R. Shelton, Ph.D., UC Berkeley, Professor (*Greek and Latin literature, Roman drama, Roman society*)
John P. Sullivan, M.A., Cambridge University, Professor (*Latin literature, Greek philosophy, Roman history, comparative literature*)
David C. Young, Ph.D., University of Iowa, Professor (*Greek poetry, ancient athletics*)

The field of classics offers a challenging and rewarding course of study in the area of Graeco-Roman culture. It is designed to accommodate both the aspirant to graduate studies in classics or related fields and the student primarily interested in a liberal arts major. The heart of classical studies is the collection of literary, historical, philosophical, and scientific writings from Homeric to Byzantine times. The reconstruction and interpretation of these writings is the primary responsibility of the classical philologist, whose colleagues are frequently specialists in some particular field such as epigraphy, papyrology, Greek political theory, classical art, or mythology. All of these studies are interrelated, and classicists pursuing them are working toward the same goal: a wider picture of Graeco-Roman culture as a means toward a clearer understanding of our own.

The several majors offered by the Department of Classics are oriented toward teaching jobs at the secondary, college, and university levels in such areas as classical civilization, ancient history, Greek and Latin literature, archaeology, Greek philosophy, and the Greek and Latin languages. After completing specific prerequisites, students with a bachelor's degree in classics are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

The department provides advising to undergraduate and graduate students. Course descriptions are prepared and distributed before the start of each quarter, and a number of brochures are available describing the undergraduate programs.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Classics

Preparation for the major. Greek 1, 2, 3, 50, and Latin 1, 2, 3, 50 (or equivalents) with a grade of C or higher; History 4A-B; Philosophy 21A.

Upper-division major. A minimum of 36 units in upper-division Greek and Latin courses numbered 106 or higher; the minimum in either language is 12 units. Up to eight units of Greek 199 and Latin 199 may be taken passed/not passed. Religious Studies 139 may be counted as an upper-division Greek course.

At least one year of German is strongly recommended for the student who intends to pursue the field of classics beyond the B.A. degree. Some electives should be chosen from Classics 37-40 and from related courses in art history, history, and philosophy.

Bachelor of Arts—Greek

Preparation for the major. Greek, 1, 2, 3, 50 (with grades of C or higher); History 4A-B; Philosophy 21A.

Upper-division major. A minimum of 36 units in upper-division Greek or Latin courses numbered 106 or higher; the minimum in Greek is 26 units. Up to eight units of Greek 199 may be taken passed/not passed.

Bachelor of Arts—Latin

Preparation for the major. Latin 1, 2, 3, 50 (with grades of C or higher); History 4A-B; Philosophy 21A.

Upper-division major. A minimum of 36 units in upper-division Latin or Greek courses numbered 106 or higher; the minimum in Latin is 26 units. Up to eight units of Latin 199 may be taken passed/not passed.

Bachelor of Arts—Classical Archaeology

Preparation for the major. Classics 37, 38, 40; Anthropology 3; History 4A; Art History 6A; Greek or Latin 1, 2, 3, 50, 106, as appropriate to concentration below.

Upper-division major. Forty to 42 upper-division units, including Anthropology 100, Anthropology 181 or 183, and either a Greek or Roman concentration. Completion of the Greek or Roman concentration will not be acknowledged on the student's official transcripts or diploma. The final upper-division course may be taken from any Greek or Latin course numbered 111 or higher or from any of the following: Art History 152A, 153A-B.

Greek concentration: Classics 100A; History 111A-B, 112A; choice of three of the following six: Art History 152E-F-J, Classics 180A-B-D.

Roman concentration: Classics 100B; History 113A-B-Q; choice of three of the following seven: Art History 152G-H-I-K-L, Classics 180A-D.

Bachelor of Arts—Classical Civilization

Preparation for the major. Classics 37, 38, 40; Philosophy 21A; Greek or Latin 1, 2, 3, and 50 or 106.

Upper-division major. Forty upper-division units distributed among the specified groups indicated below, including Classics 100A-B (8 units), at least eight units from Group 1, and at least 20 units from Groups 2-4, with a minimum of one course in each group. The tenth required course may come from any of the above groups,

or from the completion of Greek or Latin 50 and 106, provided this course is not applied simultaneously in preparation for the major. Up to eight units of Greek or Latin 199 may be taken passed/not passed in the major.

- Group 1: Classics 102, 120, 125, 130, 135
Group 2: History 111A-B, 112A-F, 113A-B; Political Science 187; Classics 104, 105
Group 3: Classics 101, 103, 106; Philosophy 151, 152, 153, 156, 195; Religious Studies 116A-B, 131B, 134A-B
Group 4: Art History 152E-F-G-H-I-J-K-L; Classics 180A-B-D

GRADUATE PROGRAM

Master of Arts—Classics

Admission

In addition to the general requirements for admission to graduate status, applicants should have an undergraduate major or equivalent in Greek, Latin, or Classics. Other students may be admitted if they demonstrate proficiency in the languages, but they will be required to make up any deficiencies in their undergraduate training in addition to completing the regular course work for the M.A. degree. The department requires that students submit Graduate Record Examination scores as part of their application material.

Degree Requirements

The M.A. degree is offered under Plan 1 (30 units and thesis) and Plan 2 (36 units). In either plan, more than half the units must be in graduate courses within the department; the remaining units may come from upper-division courses in the department or from approved courses in other departments if they are relevant to the student's program.

Classics 201A, 211, 212, and 213 are required of all M.A. candidates. In addition, candidates must meet the following requirements before taking the M.A. comprehensive examination: (1) reading knowledge of German, French, or Italian (by examination); (2) Greek and Latin sight translations, by examination (students who elect to do an M.A. in classics with a Latin emphasis are required to do only a Latin sight translation); (3) composition (by course credit or examination); (4) ancient history (by examination).

Doctor of Philosophy—Classics

Admission

The candidate for admission must present an M.A. in Classics, Latin, or Greek from UC Santa Barbara, or the equivalent from another institution. Candidates accepted directly into the Ph.D. program must submit Graduate Record Examination scores.

Degree Requirements

Students are required to spend two years in residence. There are no unit requirements. Required courses include Classics 211, 212, and 213, history of classical scholarship, Greek and Latin prose composition; two courses from the following ancillary disciplines—Greek epigraphy, comparative grammar, mythology, textual criticism, metrics, Roman law; and an interdisciplinary requirement of two to four courses in closely related fields. Some of these courses may be satisfied by examination or accommodated in proseminars.

The candidate must satisfy the following requirements by examination:

- Group 1. Reading knowledge of German and French or Italian, sight translation in Latin and Greek, prose composition

- in Latin and Greek either by examination or successful completion of course work.
- Group 2. Five examinations: (1) history of Greek literature, (2) history of Latin literature, (3) Greek history and civilization, (4) Roman history and civilization, (5) a special topic of the candidate's choice, such as an ancient author, an ancient genre, or some discipline of classics such as epigraphy.

In addition, there will be an oral examination administered by the student's committee; upon successful completion of the examination, the student will proceed with the dissertation.

CLASSICS COURSES

Yearly schedule varies. All courses are not offered each quarter.

COURSES TAUGHT IN ENGLISH

LOWER DIVISION

- 20A. Latin in Current English**
(4) Staff
Study of Latin element in English etymology. No knowledge of Latin necessary. (W)
- 20B. Greek in Current English**
(4) Staff
Study of Greek element in English Etymology. No knowledge of Greek necessary. (S)
- 21. Greek and Latin Roots in English**
(4) Staff
The purpose of the course is to teach the student how to single out those Greek/Latin word roots which are functional and productive in English, and how to use them to build up vocabulary qualitatively and quantitatively. (SS)
- 36. Ancient Epic and Narrative**
(4) Bennett
A study in translation of the *Iliad*, *Odyssey*, *Aeneid*, and such works as Apollonius' *Argonautica*, Ovid's *Metamorphoses*, and short narrative poems of the Alexandrian and Neoteric poet. (Not offered 1987-88.)
- 37. Greek Literature in Translation**
(4) Margon
Reading and lecture survey of principal Greek writers, such as Homer, Pindar, and Thucydides. (F)
- 38. Latin Literature in Translation**
(4) Bennett
Reading and lecture survey of principal Roman writers, such as Catullus, Horace, and Vergil. (S)
- 39. Women in Classical Literature**
(4) Sullivan
The aim of the course is to study in depth the portrayal of women in selected Greek and Latin classical authors from the seventh century B.C. to the second century A.D. and to relate this portrayal to the literary, historical, and social backgrounds of the works concerned. (W)
- 40. Greek Mythology**
(4) Staff
Study of the rationale of mythology, and the various patterns of mythography. Readings in primary literary sources. (F,W,S)

- 99. Introduction to Research**
(1-3) Staff
Prerequisites: consent of instructor and department chair. May be repeated to a maximum of six units.
Directed study, oriented toward research, to be arranged with individual faculty members. Course offers exceptional students an opportunity to participate in a research project or group.

UPPER DIVISION

Prerequisites for all upper-division classics courses are: upper-division standing, or one prior course in classics, or consent of instructor.

- 100A-B. Greek and Roman Civilization**
(4-4) Shelton, Clarke
Classics 100A is not a prerequisite for Classics 100B.
Introduction to the various aspects of Greco-Roman civilization such as art, education, daily life, festivals, law, religion, science, and sports. 100A: Greek, 100B: Roman. (W,S)
- 101. Man and Nature in Greek Thought**
(4) Renehan
A survey of the major Greek beliefs about the nature of man—body, soul, afterlife, gods and men, man in the cosmos—from the earliest beginnings to the early Christian period. Readings (in translation) of literary, philosophical, religious, and medical texts. (Not offered 1987-88.)
- 102. Greek Tragedy in Translation**
(4) Margon
Plays by Aeschylus, Sophocles, and Euripides in English translation. The role of tragedy in Greek culture and literature. (S)

- 103. Survey of Greek and Roman Religion**
(4) Renehan
An introduction to basic Greek and Roman religious beliefs and attitudes. Both literary and non-literary documents will be studied (in translation) for their evidential value. (Not offered 1987-88.)

- 105. Ancient Athletics**
(4) Young
Study of specific sports and events, history of ancient Olympics and other meets, and of individual achievements; professionalism, training, facilities, and place of athletics in Greek culture, literature, and art. (Not offered 1987-88.)

- 106. Magic and Medicine in Ancient Greece**
(4) Renehan
The old and the new in classical Greek modes of thought; primitive religious and magical beliefs and scientific medical teachings. A study in the intellectual revolution of Greece. Readings in primary literary sources in translation and secondary literature. (Not offered 1987-88.)

- 120. Greek and Latin Lyric Poetry**
(4) Staff
Development, forms, and interpretation of ancient lyric poetry; such authors as Sappho, Pindar, Catullus, and Propertius in English translation. (Not offered 1987-88.)

- 125. Greek and Roman Historians in Translation**
(4) Staff
Development of history as a genre; such authors as Herodotus, Thucydides, Livy, and Tacitus in English translation. (Not offered 1987-88.)

- 130. Comedy and Satire in Translation**
(4) Bennett
The comic playwrights, such as Aristophanes and Plautus, and satirists, such as Lucian and Juvenal, in English translation. (Not offered 1987-88.)

- 135. Seneca and Roman Tragedy**
(4) Shelton
Discussion of the origin and development of Roman tragedy, with specific emphasis on the tragedies of Seneca. Study of character portrayal, plot development, theatrical effect, and other elements, such as psychological exploration, typical of Senecan tragedy. (Not offered 1987-88.)

- 180A-B. Mediterranean Archaeology**
(4-4) Shelton
A: Monuments of the Bronze Age in the Aegean. B: Monuments of the archaic and classical periods in the Greek world (including south Italy and North Africa). (W)

- 180D. Roman Archaeology**
(4) Shelton
A survey of the major monuments and sites in Rome and near the Bay of Naples. (Not offered 1987-88.)

- 198. Special Readings**
(1-4) Staff
Prerequisites: consent of instructor and department chair. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in classics. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Total credit for this course is limited to six units.
Individual or small group reading and study in subjects not included in the regular curriculum.

- 199. Independent Studies in Greek and Latin**
(1-5) Staff
Prerequisites: consent of instructor and department chair. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in classics. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.
Independent study in areas in which both Greek and Latin are necessary.

GRADUATE COURSES

Graduate standing is prerequisite to all graduate courses.

- 201A-B. Proseminar**
(2-2) Young
Bibliography, methodology, and history of classical scholarship. (Not offered 1987-88.)
- 202. Comparative Greek and Latin Morphology and Syntax**
(4) Athanassakis
Introduction to classical linguistics; history of Greek and Latin in their Indo-European context (including Mycenaean Greek). (Not offered 1987-88.)
- 203. Mythology and Religion**
(4) Staff
Greek myths; development, variants, and literary use. Greek and Roman religions. (Not offered 1987-88.)

211-212-213. History of Greek and Latin Literature

(2-2-2) Staff

Survey of development of poetry and prose; major authors. Special readings and reports. (Not offered 1987-88.)

246. Metrics

(4) Renehan

Introduction to Greek and Latin metre; both theory and practice will be stressed. Chief aim: to acquaint students with metres in actual use. Some account of history of metrical scholarship (ancient and modern) will be given. (Not offered 1987-88.)

252. Latin Paleography

(4) Staff

A systematic study of handwriting in Latin manuscripts from Roman times to the renaissance. Exercises in reading, transcribing, and dating; the use of manuscripts in the preparation of critical editions of Latin texts. (Not offered 1987-88.)

253. Greek Epigraphy

(4) Jordan

The study of Greek inscriptions as documents for the history, religious, social, and cultural life of ancient Greece. (Not offered 1987-88.)

596AA-ZZ. Directed Reading and Research

(2-4) Staff

Prerequisite: written proposal approved by department chair and graduate adviser.
Individual tutorial. (F,W,S)

597. Preparation for Comprehensive Exams

(1-6)

Prerequisite: consent of graduate adviser and chair. No unit credit allowed toward degree.
Study for master's comprehensive examinations and Ph.D. examinations. (F,W,S)

598AA-ZZ. Master's Thesis Research and Preparation

(1-4) Staff

Prerequisites: graduate standing and consent of instructor and graduate adviser. No unit credit allowed toward degree.
Independent research. (F,W,S)

599. Ph.D. Dissertation Presentation

(2-12) Staff

Terminal preparation of the dissertation. (F,W,S)

GREEK COURSES

LOWER DIVISION**1. Elementary Greek**

(4) Young

Greek 1 is the first of a three-quarter sequence intended to introduce the student to the fundamentals of classical Greek. Fundamentals of grammar and syntax; reading of elementary texts. (F)

1FS. Freshman Seminar

(3)

The course will deal with the methodology of studying a literary text as a source of information for religious and social institutions.

2. Elementary Greek

(4) Young

Prerequisite: Greek 1 or equivalent.
Continuation of Greek 1. (W)

3. Intermediate Greek

(4) Jordan

Prerequisite: Greek 2 or equivalent

Review of syntax and reading of Attic prose writers. (S)

4. Accidence and Syntax

(1) Margon

Prerequisite: Greek 3 or equivalent.

Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Greek 3 will be considered the equivalent of Greek 4 where the latter is a prerequisite. (Not offered 1987-88.)

10A-B. Beginning Greek — Accelerated Sequence

(6-6) Young

The two-quarter sequence covers the same material as the regular sequence, Greek 1-2-3, but at a more rigorous pace. Designed for students, from freshmen to graduates, who wish to compress their early study of Greek into two quarters. Greek 10B and Greek 3 fulfill the same prerequisites. (Not offered 1987-88.)

50. Introduction to Prose: Xenophon, Plato

(4) Margon

Prerequisite: Greek 3 or 10B or equivalent.

Reading and syntactical analysis of Attic prose writers, such as Xenophon, Plato. (F)

UPPER DIVISION

Greek 50 or 106 or equivalent is prerequisite to all upper-division courses taught in Greek (except Greek 141).

106. Introduction to Poetry: Homer

(4) Staff

Prerequisite: Greek 3 or equivalent.

Reading in the *Iliad*. Homeric grammar and metrics. (W)

107. Lucian

(4) Margon

May be repeated for credit to a maximum of eight units.

Selected readings from Lucian. The readings will be of varying character and will be calculated to help the student make the transition from easy to more difficult Greek prose. (Not offered 1987-88.)

108. Attic Orators: Demosthenes, Andocides, and Isocrates

(4) Jordan

May be repeated for credit to a maximum of 12 units.

A study of the language, style, and historical background of famous orations by Demosthenes, Andocides, and Isocrates. (F)

138. Pre-Socratic Philosophers

(4) Jordan

Philological study in materials ranging from Thales through Democritus. (W)

141. The Greek of the New Testament and the Early Church Fathers

(4) Athanassakis

Prerequisites: Greek 1, 2, 3.

Heavy emphasis on the language and style of Greek of the New Testament and of early fathers of the Church. The aim will be to give the students the necessary competence to read these sources with familiarity and critical insight. (Not offered 1987-88.)

142A-B. Plato

(4-4) Renehan

Greek 142A and 142B may be repeated for credit to a maximum of 12 units each.

Reading and study of a complete Socratic dialogue. (Not offered 1987-88.)

143. Post-Platonic Philosophers

(4) Margon

Philological study in materials ranging from Aristotle through Plotinus. (S)

151. Euripides

(4) Jordan

May be repeated for credit to a maximum of 12 units.

Introduction to the tragic genre. Reading and study of a complete play. (S)

152. Sophocles

(4) Margon

May be repeated for credit to a maximum of 12 units.

A complete tragedy, plus readings in Sophoclean literature. (Not offered 1987-88.)

153. Aeschylus

(4) Staff

May be repeated for credit to a maximum of 12 units.

Study of a complete tragedy. Problems of textual criticism. (Not offered 1987-88.)

154. Aristophanes

(4) Staff

May be repeated for credit to a maximum of 12 units.

Reading of a complete play; history of Greek comedy. (Not offered 1987-88.)

161. Hesiod, Theognis, and Solon

(4) Renehan

May be repeated for credit to a maximum of eight units.

An introduction to archaic religion, mythology, ethics, and historiography. (Not offered 1987-88.)

162. Herodotus

(4) Jordan

May be repeated for credit to a maximum of eight units.

Reading and study of the history of Herodotus. (Not offered 1987-88.)

163. Thucydides

(4) Jordan

May be repeated for credit to a maximum of 12 units.

Reading and research in the historical, literary, and philological aspects of Thucydides. (Not offered 1987-88.)

165. Xenophon

(4) Margon

May be repeated for credit to a maximum of 12 units.

A study of the language, style, and background of his historical works. (W)

171. Lyric Poets and Homeric Hymns

(4) Young

May be repeated for credit to a maximum of eight units.

Exclusive of the choral poets and the primarily ethical elegists. The fragments of Acaeus, Anacreon, Archilochus, Sappho, Tyrtaeus, and others; selected Homeric hymns. (Not offered 1987-88.)

172. Pindar

(4) Young

May be repeated for credit to a maximum of 12 units.

Reading, interpretation, metrical study, and textual criticism. Introduction to other choral poets. (Not offered 1987-88.)

173. Hellenistic Poets

(4) Young

May be repeated for credit to a maximum of 12 units.

Introduction to the poetry of the Alexandrian period, such as that by Apollonius Rhodius, Callimachus, and Theocritus. (W)

199. Independent Studies in Greek

(1-5) Staff

Prerequisites: consent of instructor and department chair. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Greek. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Independent investigations in Greek language and literature.

GRADUATE COURSES*Greek courses 207-273 address the same subjects as the undergraduate courses bearing the corresponding numeration. However, treatment of the subjects is at the graduate level.***207. Lucian**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 107)**208. Attic Orators**

(4) Jordan

Prerequisite: graduate standing in classics. (cf. 108)**209. Greek Seminar in Plays of Menander**

(4) Staff

Prerequisite: graduate standing in classics. Examination and study of the plays of Menander, which have been discovered in this century. (Not offered 1987-88.)**220. Seminar in the Greek Novel**

(4) Sullivan

Prerequisite: graduate standing in classics. A study of the Greek romance and its place in the history of Greek literature. (Not offered 1987-88.)**238. Pre-Socratic Philosophers**

(4) Jordan

Prerequisite: graduate standing in classics. (cf. 138)**240A-B-C. Greek Prose Composition**

(2-2-2) Renehan

Prerequisite: Greek 50, 106, or equivalent. Advanced grammar, sight-reading, and extended prose composition. (F,W,S)**241AA-ZZ. Seminar in Greek Literature**

(4) Jordan

Prerequisite: Classics 201 or consent of instructor. Course number may be repeated, but not same letter.

Intensive study and research in a Greek author or genre. Author varies. (Not offered 1987-88.)

242A-B. Plato

(4-4) Staff

Prerequisite: graduate standing in classics. (cf. 142 A-B)**243. Post-Platonic Philosophers**

(4) Margon

Prerequisite: graduate standing in classics. (cf. 143)**250. Greek Papyrology**

(4) Staff

Prerequisite: graduate standing in classics. A study of the Greek papyri, especially with a view to their value in reconstructing Greek literary sources. (Not offered 1987-88.)**251. Euripides**

(4) Jordan

Prerequisite: graduate standing in classics. (cf. 151)**252. Sophocles***Prerequisite: graduate standing in classics.* (cf. 152)**253. Aeschylus***Prerequisite: graduate standing in classics.* (cf. 153)**254. Aristophanes***Prerequisite: graduate standing in classics.* (cf. 154)**255. Graduate Reading in Plutarch**

(4) Staff

Prerequisite: graduate standing. A study of language, style and historical background of the *Lives* and the *Moralia*. (Not offered 1987-88.)**256. Graduate Reading in Epicurus**

(4) Shelton

Prerequisite: graduate standing. Reading, translation, and discussion of the letters of Epicurus. (Not offered 1987-88.)**258. Graduate Reading in Homer**

(4) Staff

Prerequisites: graduate standing in classics or consent of instructor. A reading of large portions of the *Iliad* or *Odyssey*, depending on the instructor's choice. The course is primarily designed to improve the student's facility in translating Homeric Greek. (F)**259. Greek Literary Theory**

(4) Margon

Prerequisite: graduate standing. This course provides a comprehensive and critical view of the nature of Greek critical theory and practice from the Sophists to the Second Sophistic, and will touch on the relationship between ancient and modern critical theory. (Not offered 1987-88.)**261. Hesiod, Theognis, and Solon**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 161)**262. Herodotus**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 162)**263. Thucydides**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 163)**265. Xenophon**

(4) Margon

Prerequisite: graduate standing in classics. (cf. 165)**271. Lyric Poets and Homeric Hymns**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 171)**272. Pindar**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 172)**273. Hellenistic Poets**

(4) Young

Prerequisite: graduate standing in classics. (cf. 173)**596AA-ZZ. Directed Reading and Research**

(2-4) Staff

Prerequisite: written proposal approved by department chair and graduate adviser. Individual tutorial. (F,W,S)**598AA-ZZ. Master's Thesis Research and Preparation**

(1-4) Staff

Prerequisites: graduate standing and consent of instructor and graduate adviser. No unit credit allowed toward degree. Independent research. (F,W,S)**599. Ph.D. Dissertation Presentation**

(2-12) Staff

Terminal preparation of the dissertation. (F,W,S)

LATIN COURSES**LOWER DIVISION****1. Elementary Latin**

(4) Staff

(F)

2. Elementary Latin

(4) Staff

Prerequisite: Latin 1 or equivalent. Continuation of Latin 1. (W)**3. Intermediate Latin**

(4) Staff

Prerequisite: Latin 2 or equivalent. Review of forms and syntax and reading of Roman prose writers. (S)**4. Accidence and Syntax**

(1) Margon

Prerequisite: Latin 3 or equivalent. Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite: an A or B grade in Latin 3 will be considered the equivalent of Latin 4 where the latter is a prerequisite. (Not offered 1987-88.)**10A-B. Beginning Latin—Accelerated Sequence**

(6-6) Bennett

The two-quarter sequence covers the same material as the regular sequence, Latin 1-2-3, but at a more rigorous pace. Designed for students, from freshmen to graduates, who wish to compress their early study of Latin into two quarters. Latin 10B and Latin 3 fulfill the same prerequisites. (W,S)

11SS. Intensive Beginning Latin.

(8) Renehan

This course is intended to cover all the material normally covered in a first-year Latin course.

There will be much emphasis on grammar; actual Latin passages of moderate difficulty will be read. (SS)

50. Introduction to Latin Prose

(4) Staff

Prerequisite: Latin 3 or 10B.

Selected authors. Reading and syntactical analysis of prose writers, such as Caesar, Cicero, and Nepos. (F)

UPPER DIVISION

Latin 50 or Latin 106 or equivalent is prerequisite to all upper-division courses taught in Latin (except Latin 140).

103. Medieval Latin Readings

(4) Staff

Prerequisites: Latin 1, 2, and 3 (or their equivalents), or consent of instructor.

Graded and selected reading and study of medieval Latin prose and verse writers. (Not offered 1987-88.)

106. Introduction to Latin Poetry

(4) Staff

Selected authors; Catullus, Ovid, Martial. Grammar and metrics of Latin poetry. (W)

111. Roman Epic

(4) Sullivan

May be repeated for credit to a maximum of 12 units.

Backgrounds. Vergil. Introduction to later epic poets such as Lucan and Statius. (Not offered 1987-88.)

112. Roman Elegy

(4) Sullivan

May be repeated for credit to a maximum of 12 units.

Reading and study of Propertius and other elegists. (S)

113. Roman Satire

(4) Sullivan

Horace, Juvenal, Persius, and Martial. (Not offered 1987-88.)

114. Roman Comedy

(4) Bennett

Plautus and Terence. Reading of complete plays and study of the origins of Roman comedy. (Not offered 1987-88.)

116A-B. Cicero: Essays, Letters, and Orations

(4-4) Staff

May be repeated for credit to a maximum of 12 units.

Philosophical and rhetorical works and speeches. (Not offered 1987-88.)

117. Prose of the Empire

(4) Shelton

May be repeated for credit to a maximum of 12 units.

Study and reading selected from such authors as Petronius, Seneca, and Quintilian. (Not offered 1987-88.)

118. Roman Epistles

(4) Margon

Reading, translation, and discussion of the letters of Cicero and of Pliny. (Not offered 1987-88.)

120. Sallust

(4) Margon

May be repeated for credit to a maximum of 12 units.

Reading and philological study. (Not offered 1987-88.)

122. Livy

(4) Shelton

May be repeated for credit to a maximum of eight units.

Study of the structure and Latinity of Livy. Extensive reading. (S)

123. Tacitus

(4) Sullivan

May be repeated for credit to a maximum of 12 units.

Reading in the major works. Study of Tacitean style and models. (W)

124. Caesar

(4) Staff

May be repeated for credit to a maximum of eight units.

Study of Caesar as historian and Latin prose stylist. Extensive reading. (Not offered 1987-88.)

134. Lucretius

(4) Shelton

May be repeated for credit to a maximum of 12 units.

Reading, translation, discussion of style and metre of Lucretius' epic poem *De Rerum Natura*. (Not offered 1987-88.)

135. Vergil

(4) Shelton

Reading, translation, discussion of style and metre of Vergil's epic poem *Aeneid*, as well as his *Georgics* and *Eclogues*. (F)

136. Ovid

(4) Shelton

Reading, translation, discussion of style and metre of Ovid's epic poem *Metamorphoses* and of his *Fasti*. (Not offered 1987-88.)

137. Catullus

(4) Sullivan

May be repeated for credit to a maximum of 12 units.

Reading, translation, discussion of style and metre of his poems. (Not offered 1987-88.)

138. Horace

(4) Bennett

May be repeated for credit to a maximum of 12 units.

Reading, translation, discussion of the *Odes*, *Satires*, and *Epistles*. (W)

140. The Latin of the Vulgate Bible and the Early Church

(4) Staff

Prerequisite: one year of Latin or consent of instructor.

Extensive readings from the Latin Bible (Old and New Testaments) and from other Christian Latin documents. Heavy emphasis on fundamentals of syntax and the differences between classical and vulgar Latin. (Not offered 1987-88.)

199. Independent Studies in Latin

(1-5) Staff

Prerequisites: consent of instructor and department chair. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Latin. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Independent investigations in Latin language and literature.

GRADUATE COURSES

Latin courses 211-238 address the same subjects as the undergraduate courses bearing the corresponding numeration. However, treatment of the subjects is at the graduate level.

204. Graduate Reading Course in Plautus

(4) Renehan

Prerequisite: graduate standing in classics.

Plautus. Reading of one or more complete plays with intensive study of various problems, e.g., origins of Roman comedy, Plautine textual criticism and metrics, nature of early Latin language. (Not to be offered 1987-88.)

205. Seminar in Senecan Tragedy

(4) Shelton

Prerequisite: graduate standing in classics.

Research and discussion of the tragedies of Seneca. (Not offered 1987-88.)

206. Seminar in Neronian Literature

(4) Sullivan

Prerequisite: graduate standing in classics.

The age of Nero, prolific in literature and philosophy, had certain common themes, such as the new golden age and the nature of the principate. Selections from both Senecas, Lucan, Persius, Calpurnius Siculus will be used to explore those themes. (Not offered 1987-88.)

210A-B-C. Latin Prose Composition

(2-2-2) Sullivan, Bennett

Prerequisite: Latin 50, 106, or equivalent.

Advanced grammar and extended prose composition. (Not offered 1987-88.)

211. Roman Epic

(4) Staff

Prerequisite: graduate standing in classics. (cf. 111)

212. Roman Elegy

(4) Sullivan

Prerequisite: graduate standing in classics. (cf. 112)

213. Roman Satire

(4) Staff

Prerequisite: graduate standing in classics. (cf. 113)

214. Roman Comedy

(4) Staff

Prerequisite: graduate standing in classics. (cf. 114)

215. Seminar in the Roman Novel

(4) Sullivan

Prerequisite: graduate standing in classics.

Works such as Petronius' *Satyricon* and Apuleius' *Metamorphoses*. A study of the literary problems. (F)

216A-B. Cicero: Essays, Letters, and Orations

(4-4) Staff

Prerequisite: graduate standing in classics. (cf. 116A-B)

217. Prose of the Empire

(4) Staff

Prerequisite: graduate standing in classics. (cf. 117)

218. Roman Epistles

(4) Staff

Prerequisite: graduate standing in classics. (cf. 118)

220. Sallust

(4) Staff

Prerequisite: graduate standing in classics. (cf. 120)**221A-Z. Seminar in Latin Literature**

(4) Sullivan

Prerequisite: Classic 201 or consent of instructor. Course number may be repeated, but not same letter.
Intensive study and research in a Latin author or genre. Author varies. (F)**222. Livy**

(4) Shelton

Prerequisite: graduate standing in classics. (cf. 122)**223. Tacitus**

(4) Sullivan

Prerequisite: graduate standing in classics. (cf. 123)**224. Caesar**

(4) Staff

Prerequisites: graduate standing in classics. (cf. 124)**232. Graduate Reading in Augustan Poets**

(4) Sullivan

Prerequisite: graduate standing in classics.
This course covers the Augustan period of Latin literature with its great political and social tensions, one of the most productive literary eras known to us. A literary, social, and historical study in the time of such authors as Ovid, Vergil, and Propertius. (Not offered 1987-88.)**233. Graduate Reading in Seneca**

(4) Shelton

Prerequisite: graduate standing in classics.
Reading and translation of the Latin tragedies of Seneca; discussion of grammar and metre. (Not offered 1987-88.)**234. Lucretius**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 134)**235. Vergil**

(4) Shelton

Prerequisite: graduate standing in classics. (cf. 135)**236. Ovid**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 136)**237. Catullus**

(4) Staff

Prerequisite: graduate standing in classics. (cf. 137)**238. Horace**

(4) Bennett

Prerequisite: graduate standing in classics. (cf. 138)**245. Latin Sight Translation**

(2) Staff

Prerequisite: graduate standing in classics.
Instruction and practice in how to translate Latin at sight without the use of a dictionary. (Not to be offered 1987-88.)**596AA-ZZ. Directed Reading and Research**

(2-4) Staff

Prerequisite: written proposal approved by department chair and graduate adviser.
Individual tutorial. (F,W,S)**598AA-ZZ. Master's Thesis Research and Preparation**

(1-4) Staff

Prerequisites: graduate standing and consent of instructor and graduate adviser. No unit credit allowed toward degree.
Independent research. (F,W,S)**599. Ph.D. Dissertation Presentation**

(2-12) Staff

Terminal preparation of the dissertation. (F,W,S)

Communication Studies

Communication Studies Program, Ellison Hall 1832; Telephone (805) 961-4479. Program Chair: Edward I. Donnerstein.**Faculty**James J. Bradac, Ph.D., Northwestern University, Professor (*interpersonal communication and language studies*)
Edward I. Donnerstein, Ph.D., Florida State University, Professor (*psychological effects of mass communication, media violence*)
Dorothy Krueger, Ph.D., Temple University, Associate Professor (*interpersonal and small group communication*)
Glen E. Mills, Ph.D., University of Michigan, Professor Emeritus, Department of Speech
Anthony Mulac, Ph.D., University of Michigan, Professor (*quantitative research and language studies*)
Upton S. Palmer, Ph.D., University of Michigan, Professor Emeritus, Department of Speech
Rollin W. Quimby, Ph.D. University of Michigan, Professor (rhetoric)
Edwin R. Schoell, Ph.D. (University of Denver, Professor (*language studies and public address*)
Federico Subervi, Ph.D., University of Wisconsin-Madison, Assistant Professor (*mass communication, ethnic factors in media use*)
John M. Wiemann, Ph.D., Purdue University, Associate Professor (*interpersonal and nonverbal behavior, communicative competence*)**Affiliated Faculty**Don H. Zimmerman, Ph.D., UC Los Angeles, Professor of Sociology
(*ethnomethodology, conversation analysis, observation of natural settings*)The Communication Studies Program offers a broad undergraduate curriculum with four primary emphases: interpersonal communication, language, mass communication, and rhetoric. The program is concerned with human communication theory and research; *it does not provide vocational, media production, or technical training.* Degrees are offered at the B.A. and M.A. levels. Prospective majors are urged to consult with a peer adviser or departmental representative.

After completing specific prerequisites, students with a bachelor's degree in communication studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Communication Studies

The Communication Studies Program consists of three tiers of courses: broad survey (Communication Studies 10, 11, and 12), pre-major (Communication Studies 88 and 89), and upper-division major courses.

Preparation for the major. Students are encouraged to take the survey courses as early as possible in the program. The pre-major (Communication Studies 88 and 89) and two communication studies survey courses (Communication Studies 10, 11, or 12) taken at UC must be completed with a grade-point average of at least 2.5 and no grade lower than C- before students will be admitted to the major. Additional survey courses should be taken early in the program; they serve as prerequisites to upper-division courses.Before these preparatory requirements are completed, students may declare a pre-communication studies major. Upon successful completion of these requirements, students may petition for full major status, generally *prior* to the accumulation of 100 units, but not *after* the completion of 144 units. Admission to the pre-major does not guarantee admission to the communication studies major regardless of the number of communication studies units taken.**Upper-division major.** Forty upper-division units are required for the major, including (1) one course each from three of the following four core areas of study (12 units): interpersonal communication (Communication Studies 106, 107, 108), language (Communication Studies 109, 110, 111), mass communication (Communication Studies 112, 113, 114), and rhetoric (Communication Studies 115, 116, 117); and (2) 28 units of electives, either additional courses selected from above, from any upper-division communication studies course, or from the following list of courses, subject to the credit limitations described following the list: Linguistics 130, 131, 185; Sociology 133, 136, 136Q; Political Science 120, 171; Speech 153. Note the following credit limits in the upper-division major: 8 units of elective courses outside the Communication Studies Program; 4 units each of Communication Studies 156, 157; 4 units combined of Communication Studies 180, 181; 12 units of Communication Studies 199.**Senior Honors Program**

Qualified majors will be invited to participate in a senior honors program (Communication Studies 180 and 181) offering the opportunity to work closely with a faculty sponsor on an in-depth project culminating in a senior thesis. Requirements include senior standing, completion of at least 16 upper-division major units, minimum grade-point average of 3.4, and sponsorship by a faculty member. Students successfully completing the program will be eligible for graduation with Distinction in the Major.

GRADUATE PROGRAM

Master of Arts—Communication Studies

The department offers two plans leading to the degree of Master of Arts in communication studies. Plan 1 requires a minimum of 32 units of coursework and a thesis. Plan 2 requires 44 units of course work and successful completion of a comprehensive examination. Both plans require Communication Studies 200 and 204. Teaching assistantships and fellowships are

available to qualified students. The graduate adviser can supply full details about the program.

COMMUNICATION STUDIES COURSES

LOWER DIVISION

10. Fundamentals of Interpersonal and Small Group Communication

(4) Staff

Basic interpersonal and small group communication. Foundation for upper-level courses. Includes experiential laboratory.

11. Fundamentals of Public Communication

(4) Staff

Introduction to theory and analysis of Public Communication. Emphasis on the historical and philosophical foundations of the basic concepts of rhetoric and public discourse.

12. Fundamentals of Mass Communication

(4) Staff

Critical survey of radio, television, newspapers, and magazines as instruments of mass communication. Emphasis on the functions of each medium with attention to the roles of disseminators of information, persuasion, and entertainment.

43. Fundamentals of Public Speaking

(4) Staff

Introductory course, emphasizing current theories of communication, audience analysis and persuasion. Preparation and presentation of speeches on topics of current concern. Individual growth stressed through practice, videotaping, and conferences.

88. Interpreting Communication Research

(4) Staff

Prerequisite: at least one of the following: Communication Studies 10, 11, or 12.

This course presents theoretical and practical concerns underlying procedures most commonly used in communication research. Students will be able to interpret findings of communication research and better understand research methods, so they will be prepared for advanced coursework in communication.

89. Perspectives on Communication Theory

(4) Staff

Prerequisite: Communication Studies 88

Discussion of the process of communication theory construction, including a survey of social science paradigms.

UPPER DIVISION

106. Small Group Communication

(4) Krueger

Prerequisites: Communication Studies 10 and 89. Open to majors only.

Theory and research on communication in several group contexts. Includes experiential laboratory in which students observe and analyze communication processes in small groups.

107. Interpersonal Communication

(4) Wiemann

Prerequisites: Communication Studies 10 and 89. Open to majors only.

Survey of theories of interpersonal communication in social and intimate relational contexts, with particular attention to role enactment, social exchange, dimensions of interpersonal communication, development and deterioration of relationships, and communicative competence.

108. Acquisition of Communicative Behavior

(4) Bradac, Wiemann

Prerequisites: Communication Studies 10 and 89.

Survey of research and theory on the development of communicative competence.

109. Language and Human Behavior

(4) Schoell

Prerequisites: Communication Studies 10 and 89.

A study of the role of language in our behavioral patterns. Discussions, demonstrations and experiments are supplemented by readings from a wide variety of authorities on language science. Includes both verbal and nonverbal aspects of language behavior.

110. Language and Communication Processes

(4) Bradac

Prerequisites: Communication Studies 10 and 89.

Theory and research on the role of language in various communication contexts. Topics include: the nature of signs and symbols; language, perception, and thought; social psychological factors in verbal encoding; and language and impression formation.

111. Nonverbal Communication in Human Interaction

(4) Wiemann

Prerequisites: Communication Studies 10 and 89.

A review of theories and empirical research on the role of paralinguistic and kinesic message-behaviors in face-to-face communication. Students will conduct and report original field or laboratory studies of nonverbal communication.

112. History of Mass Communication Institutions

(4) Staff

Prerequisites: Communication Studies 12 and 89. Open to majors only.

Development of mass media institutions, such as press, radio, television. Emphasis on relationship between shape of media institutions and economic, government, and social controls, past, present, and future.

113. Mass Communication and Human Behavior

(4) Staff

Prerequisites: Communication Studies 12 and 89. Open to majors only.

Theories of mass communication in relation to interpersonal communication processes. Analysis of behavior of audiences of the mass media. Emphasis on family interaction, persuasion theory, media effects on children and minorities, sex-role stereotyping, and techniques of audience measurement.

114. Mass Communication and Society

(4) Subervi

Prerequisites: Communication Studies 12 and 89. Open to majors only.

Theoretical analysis of the relationship of mass media content, style, and structure to social, political, and economic institutions and processes.

115. Development of Rhetorical Theory

(4) Quimby

Prerequisites: Communication Studies 11 and 89. Open to majors only.

Critical survey of the evolution of rhetorical theory from classical times to the nineteenth century.

116. Critical Analysis of Rhetoric

(4) Quimby

Prerequisites: Communication Studies 11 and 89.

Introduction to the process of rhetorical criticism and the analysis of rhetorical texts.

117. Persuasion

(4) Mulac

Prerequisites: Communication Studies 11 and 89.

Analysis and synthesis of current persuasion theory as it has evolved through research in the behavioral sciences. Topics for study include: attention, motivation, set, materials of persuasion, stimulus manipulation, and measurement of resultant behavior.

120. Interviewing Theory and Practice

(4) Staff

Prerequisites: Communication Studies 10 and 89.

Analysis of the interview as a unique communication context, including the application of theoretical concepts and practice in designing and conducting interviews of various types (e.g., surveys, employment, information giving, counseling).

121. Communication and Conflict

(4) Staff

Prerequisites: Communication Studies 10 and 89.

Theory and research on communication and conflict in various contexts. Experiential laboratory in which students observe and analyze conflict through the use of simulations and exercises.

122. Organizational Communication

(4) Staff

Prerequisites: Communication Studies 10 and 89.

Application of communication theory and research to ongoing organizations, with special emphasis on bureaucratic industrial organizations.

123. Cultural Influences on Communication

(4) Staff

Prerequisites: Communication Studies 10 or 12, and 89.

Cross-cultural influences on communication processes. May deal with face-to-face or electronically mediated communication.

124. Family Communication

(4) Krueger

Prerequisites: Communication Studies 10 and 89.

Communication strategies and patterns in intimate, enduring relationships. Topics include partner selection, parenting, marital roles and conflict.

125. Pragmatics of Human Communication

(4) Krueger, Wiemann

Prerequisites: Communication Studies 10 and 89, and consent of instructor.

Interpersonal communication theory and research from an interactional perspective. Emphasis on the work of Gregory Bateson.

126. Gender and Communication

(4) Mulac

Prerequisites: Communication Studies 10 and 89.

Nonverbal and verbal differences and similarities in the messages of male and female communicators. Topics include: acquisition of gender-linked differences, effects they have in interpersonal settings, and their modification through interpersonal accommodation.

129. Phonetics

(4) Schoell

Prerequisites: Communication Studies 10 and 89.

Phonetic identification of the sounds of American English, acoustics and physiology of speech production. General American pronunciation standards and regional speech variations.

133. Mass Communication and Children

(4) Subervi

Prerequisites: Communication Studies 12 and 89.

Analysis of empirical and critical research on the relationship between mass media and children. Particular attention paid to cognitive processing of media stimuli, patterns of socialization, learning theories, and policy implications of the conducted research.

134. Developing Issues in Mass Communication

(4) Staff

Prerequisites: Communication Studies 12 and 89. Open to majors only.

Survey of current legal, social, and technical problems facing managers, regulators, and audiences of mass media.

135. Mass Communication and Ethnic/Racial Groups

(4) Subervi

Prerequisites: Communication Studies 12 and 89.

Theory and analysis of the problems and characteristics of mass communication with reference to media ownership and structure, including content and effects of programs on ethnic/racial groups.

139. Community Dialog

(4) Staff

Prerequisites: Communication Studies 11 and 89.

Theoretical study of interpersonal, group and public speech communication followed by field application in local community through Campus Speaker's Bureau.

140A. Issues in American Public Address

(4) Schoell

Prerequisites: Communication Studies 11 and 89.

A survey of significant issues and a study of the leading speakers who dealt with them. Covers the historical period up to the close of the Civil War.

140B. Issues in American Public Address

(4) Schoell

Prerequisites: Communication Studies 11 and 89.

A survey of significant issues and a study of the leading speakers who dealt with them. Covers the historical period from the close of the Civil War to World War II.

140C. Issues in American Public Address

(4) Schoell

Prerequisites: Communication Studies 11, 89, 140A or 140B, and consent of instructor.

A rhetorical study in depth of the speaking of a period, or the speaking on a single issue, or the speaking of an individual.

141. Contemporary Public Address

(4) Staff

Prerequisites: Communication Studies 11 and 89.

An analytical study of the persuasive efforts of the leaders of major social, political and religious reform movements since World War II.

142. Contemporary Rhetoric

(4) Staff

Prerequisites: Communication Studies 11 and 89.

Discussion of theoretical formulations of Richards, Weaver, Burke, McLuhan, and others, and the theory-building dimension of research in verbal communication.

143. Advanced Public Speaking

(4) Staff

Prerequisites: Communication Studies 11 and 89.

Theory and practice of oral communication as it applies to a wide range of situations. Theoretical constructs based upon current quantitative research provide criteria for evaluating communicational events. Students prepare and deliver a variety of speeches to audiences face-to-face as well as via closed circuit television.

144. Argumentation

(4) Staff

Prerequisites: Communication Studies 11 and 89.

Analysis of controversies, research and evidence, logical and ethical responsibility, attack and defense, organization, presentation, and evaluation of oral and written arguments.

150. Advanced Group Communication

(4) Staff

Prerequisites: Communication Studies 106 and consent of instructor. May be repeated for credit to a maximum of 12 units.

In-depth focus on salient issues in group communication. Covers relevant theory and research in topic area.

151. Advanced Interpersonal Communication

(4) Staff

Prerequisites: Communication Studies 107 or 108 and consent of instructor. May be repeated for credit to a maximum of 12 units.

Intensive analysis of current theory and research in a selected area of interpersonal communication, with special attention to theory development and testing. Topics vary each quarter.

152. Advanced Organizational Communication

(4) Staff

Prerequisites: Communication Studies 122 and consent of instructor. May be repeated for credit to a maximum of 12 units.

Intensive analysis of current theory and research in selected areas of organizational communication. Topics include organizational communication diagnosis and auditing, organizational innovation and change, and communication management.

156. Advanced Nonverbal Communication Analysis

(4) Staff

Prerequisites: Communication Studies 111 and consent of instructor. May be repeated for credit to a maximum of eight units.

Advanced study of paralinguistic and kinesic message-behavior in face-to-face communication. Pertinent nonverbal variables will be identified through survey of empirical research and applied to analysis of communication samples.

157. Advanced Language Behavior Analysis

(4) Staff

Prerequisites: Communication Studies 109 or 110 and consent of instructor. May be repeated for credit to a maximum of eight units.

Advanced study of language behavior and its effects in various communicational settings. Pertinent language variables will be identified through survey of empirical language-effects research and then applied to analysis of speech samples.

158. Advanced Language and Communication Processes

(4) Staff

Prerequisites: Communication Studies 109, 110 or 111 and consent of instructor. May be repeated for credit to a maximum of 12 units.

Intensive scrutiny of current theory and research on linguistic aspects of communication. Topics will vary each quarter.

161. Advanced Mass Communication

(4) Staff

Prerequisites: Communication Studies 112, 113 or 114 and consent of instructor. May be repeated for credit to a maximum of 12 units.

Investigation of current theory and research in a selected area of mass communication. Variable topics, including comparative media systems, social effects of specific genres, implications of new communication technologies.

164. Classical Rhetoric

(4) Quimby

Prerequisites: Communication Studies 115 and consent of instructor.

Development of rhetorical theory from Gorgias to the Christian sermon.

165. Advanced Rhetorical Theory

(4) Staff

Prerequisites: Communication 115, 116 or 117 and consent of instructor. May be repeated for credit to a maximum of 12 units.

Investigation of current theory and research in a selected area of rhetorical theory and public address. Topics will vary each quarter.

170. Freedom of Speech

(4) Staff

Prerequisite: Communication Studies 89.

A historical survey of the development of the concept of free speech, and a study of First Amendment controversies in the United States during the twentieth century.

171. Quantitative Methods

(4) Mulac

Prerequisites: Communication Studies 89 and consent of instructor.

The methodology for quantitative research in communication. Computation of standard statistical procedures, measurement theory, and experimental design.

172. Advanced Communication Theory and Research

(4) Staff

Prerequisites: completion of one course from each relevant core area and consent of instructor. May be repeated for credit to a maximum of 12 units.

Integration and synthesis of theories and research between at least two core areas of communication. Variable topics, such as family relationships, health, or intercultural communication will be the focus of these integrations.

180. Senior Honors Seminar

(4) Staff

Prerequisite: limited to senior honors students.
Seminar offered fall quarter which covers methodological, theoretical and procedural issues involved in undertaking a senior thesis. Students are expected to produce a thesis prospectus by the end of the course.

181. Senior Honors Thesis

(4) Staff

Prerequisites: Communication Studies 180, limited to senior honors students. Only four units may apply to the major.
Independent work with faculty sponsor culminating in senior thesis. Students must take eight units, four in winter and spring quarters, with a grade given at the end of spring.

191. Practicum in Human Communication

(1) Staff

Prerequisites: open to junior/senior majors of proven scholastic ability by consent of instructor; two upper-division courses in the practicum topic area. Course may be repeated for a maximum of three units.
Provides faculty supervision for students participating in formal, practical work experiences. Written proposal required.

193. Applying Communication Courses to the Internship Experience

(4) Staff

Prerequisites: communication studies majors, senior standing; 3.0 grade-point average.
Integrate field work experience with communication theory and current literature. Weekly lecture to be concurrent with or succeeding 100 quarter hour internship in the field of communication. Lecture topics include theories of interpersonal communication, organizational structures, management, and communication styles.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisites: upper-division standing and consent of instructor. May be repeated for a maximum of six units.
Selected topics in accordance with instructor's area of specialization.

199. Independent Studies in Communication

(1-5) Staff

Prerequisites: open to seniors of proven scholastic ability by consent of department chair and instructor. Students must have 1) attained upper-division standing; 2) a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in communication studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.
Written proposal required.

GRADUATE COURSES**200. Communication Theory Construction**

(4) Wiemann, Bradac

The nature of theory and theory building in human communication.

203. Measurement and Statistics in Communication Research

(4) Mulac

Measurement theory, experimental design and computation of standard statistical procedures. Students pilot test procedures for measuring communication variables in a research context.

204. Seminar: Communication Research Methods

(4) Mulac

Prerequisite: Communication Studies 203 or consent of instructor.
Criticism of behavioral research in communication.

206. Seminar: Group Communication

(4) Krueger

Readings in communication theory and design of research projects on small group communication.

207. Seminar: Interpersonal Communication

(4) Wiemann

Analysis of theory and research related to interpersonal communication processes, with an emphasis on informal and intimate relationships. Development and implementation of student research.

210. Seminar: Language and Communication Processes

(4) Bradac

Variable topics, focusing on the role of language in attribution and communication.

211. Seminar: Nonverbal Communication

(4) Wiemann

Analysis of nonverbal behavior as communication, with special emphasis on design and implementation of research.

213. Seminar: Theories of Mass Communication

(4) Subervi

Cognitive and social process theories of mass communication. Design and implementation of research strategies for message and audience analysis.

215. Classical Rhetoric

(4) Quimby

Ancient theories of rhetoric and their applications to modern theories of communication.

217. Seminar in Persuasion

(4) Mulac

Analysis and criticism of current theories of persuasion.

221. Seminar: Communication and Conflict

(4) Krueger

Theory and research on the process of communication in conflict situations.

222. Seminar: Organizational Communication

(4) Staff

Analysis of communication in on-going organizations. Topics of interest include communication networks, decision making, communication climate, theories of management communication, etc.

223. Seminar: Communication and Culture

(4) Staff

Theory and literature of the ethnography of communication, with particular reference to the question of how to discover, describe, and interpret a community's culture patterns of communication.

224. Seminar: Family Communication

(4) Krueger

Theory and research on communication in intimate, enduring relationships. Focus on marital decision making and correlates of relational satisfaction.

225. Seminar: Pragmatics of Human Communication

(4) Krueger, Wiemann

Seminar on the symbol-user relationship. Takes an interactional view of interpersonal communication.

226. Seminar: Gender and Communication

(4) Mulac

Nonverbal and verbal differences and similarities in the communication of males and females. Theoretical perspectives include the Gender-Linked Language Effect, Speech Accommodation Theory, and sex-role stereotypes. Acquisition and maintenance of gender-linked differences are discussed.

233. Seminar: Socialization and Mass Communication

(4) Staff

Theories and research on contribution of mass communication to socialization processes. Focus on developing empirical research in area.

235. Mass Communication and Culture

(4) Subervi

Theory and research on issues and problems related to mass communication and ethnic/racial groups in the United States.

264. Studies in Rhetoric

(2-4) Quimby

Prerequisite: consent of instructor.
Critical examination of types of rhetoric.

299A. Current Instructional Research and Materials Used in Teaching Communication

(4) Schoell

Prerequisites: senior or graduate standing and consent of instructor.

The application of research and theory to classroom practice and the teaching of speech communication.

299B. Student Teaching: Communication Studies

(3-6) Schoell

Prerequisites: Communication Studies 299A, graduate standing and consent of instructor.
Supervised teaching in communication at the secondary level.

500. Teaching College Communication

(3) Mulac

Theory of teaching communication at the college level. Topics include the preparation of behavioral objectives and course syllabi, evaluation of performance, construction of tests, and grading practices.

501. Apprentice Teaching

(4) Staff

Prerequisite: Communication Studies 500 (may be taken concurrently). No unit credit allowed toward advanced degree.

Application of theory to the practices of teaching college courses in communication. Students will issue assignments, conduct class discussions, prepare and deliver lectures, score tests, and assign grades under the supervision of the faculty member who is the course director.

502. Practicum for Teaching Associates

(3-5) Staff

Prerequisite: Communication Studies 500 or equivalent. No unit credit allowed toward advanced degree.

Theory and practice of teaching undergraduate classes in communication. Topics include the selection of behavioral objectives, selection of texts and other materials, creation of syllabi,

preparation of lectures and assignments, administration of examination, and maintenance of standards.

503. Research Practicum

(2-4) Staff

No unit credit allowed toward advanced degree.

A practicum for research associates.

505. Issues in Communication Research

(1) Staff

Prerequisites: graduate standing. Enrollment is mandatory each quarter that a student is in residence; units do not fulfill degree requirements.

Presentation of research completed or in progress by students, faculty and guest speakers followed by critical discussion of the issues raised.

594A-Z. Special Topics

(1-4) Staff

Prerequisite: consent of instructor.

Special seminar on research subjects of current interest.

595A-Z. Group Studies

(4) Staff

Prerequisite: consent of instructor

Critical review of research in selected fields.

596A-Z. Directed Reading and Research

(2-4) Staff

Prerequisite: consent of instructor. May be repeated for a maximum of 12 units.

Individual tutorial. A written proposal must be approved by the department chair and filed with the Graduate Division.

597A-Z. Preparation for the Qualifying Examination

(1-4) Staff

Prerequisite: consent of graduate advisor. No unit credit allowed toward advanced degree.

Directed group or individual preparation for the master's or doctoral qualifying examination.

598A-Z. Master's Thesis Research and Preparation

(1-12) Staff

Prerequisite: consent of thesis advisor.

The thesis is done under the direction of the chair of student's thesis committee.

599A-Z. Dissertation Preparation

(1-12) Staff

Prerequisites: consent of instructor; advancement to candidacy.

This course is reserved for writing the dissertation.

English and Comparative Literature (*literary theory, history of criticism, modern drama*)

Gerhart Hoffmeister, Ph.D., University of Maryland, Professor of German (*baroque and romantic literature*)

Torborg L. Lundell, Ph.D., UC Berkeley, Associate Professor of Swedish (*literature and film, folk and fairy tales*)

John P. Sullivan, M.A., Cambridge University, Professor of Classics (*Latin literature, Ezra Pound*)

Ronald W. Tobin, Ph.D., Princeton University, Professor of French (*17th-century French theatre, Racine*)

Comparative literature is the study of literature without specific regard for national or linguistic boundaries. It is comparative in that it deals with the interrelationships between different literatures. The comparatist deals with the masterpieces, theories, themes, and periods of world literature.

The interdepartmental program in comparative literature offers an undergraduate major leading to the B.A. degree, and graduate programs leading to the M.A. and Ph.D. degrees. The advisory committee represents the Departments of Classics, English, French and Italian, Germanic and Slavic, and Spanish and Portuguese. Students are advised by the chair of the program and by members of the advisory committee within their major departments.

The comparative literature program provides preparation for possible careers as teachers and scholars as well as for positions in federal, state, and local government and in community service. After completing specific prerequisites, students with a bachelor's degree in comparative literature are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Comparative Literature

Preparation for the major. Students electing English as their literature of primary emphasis complete English 20, 30, 40, Comparative Literature 30A, and levels 1-6, or the equivalent, in the language of secondary emphasis. Students electing a foreign literature as their primary emphasis complete the normal departmental sequence of elementary and intermediate language courses.

Upper-division major. Forty units of upper-division course work in two national literatures in their original languages; one of these may be in English. Twenty of these units must be in the student's primary literature, 16 in the secondary literature. Majors must also take Comparative Literature 100, normally in their senior year. Up to eight units of comparative literature courses may be substituted for required upper-division courses. Please note: No courses in grammar or composition will apply toward fulfillment of upper-division major requirements

GRADUATE PROGRAM

Master of Arts—Comparative Literature

Admission

In addition to fulfilling the general requirements for admission to graduate status, the applicant should have an undergraduate major in comparative literature, or the equivalent. Foreign applicants must take the Test of English as a Foreign

Language (TOEFL) unless they have completed a bachelor's or master's degree in the U.S. or speak English as a native language. TOEFL exam results are sent directly to the Graduate Division.

Degree Requirements

M.A. students will have as an advisory committee the program chair and two members of the advisory committee appointed to represent their fields of interest. The M.A. degree is offered under two plans: Plan 1 (thesis) and Plan 2 (comprehensive examination).

Plan 1 requires thirty units of course work, six units of thesis work, and Comparative Literature 200. Of the thirty units, more than half must be in graduate courses approved by the advisory committee. In addition to the two primary languages, the student must demonstrate a reading knowledge of a foreign language approved by the committee. The thesis should be comparative in nature and methodology.

Plan 2 requires thirty-six units of course work in two literatures, one of which may be English, in their original languages, and Comparative Literature 200. Approximately two-thirds of the units should be in the student's primary literature, one-third in the secondary, and more than half the total in graduate courses. All courses must be approved by the advisory committee. The candidate must demonstrate a reading knowledge of a foreign language approved by the advisory committee and must pass a comprehensive written examination on the major and minor literatures. M.A. candidates under Plan 2 who wish to continue for the Ph.D. should expect to extend course work to include a second minor.

Doctor of Philosophy — Comparative Literature

Admission

In addition to fulfilling the general requirements for admission to graduate status, the student must meet the requirements of the comparative literature program. A student entering with an M.A. degree from another university must demonstrate, normally by examination, satisfactory literary background and linguistic resources. Any course deficiencies should be made up during the first quarter of residence. Foreign applicants must take the Test of English as a Foreign Language (TOEFL) unless they have completed a bachelor's or master's degree in the U.S. or speak English as a native language. The student will have an advisory committee composed of faculty members who represent the major and minor languages.

Degree Requirements

The Ph.D. degree in comparative literature requires the study of three literatures, one of which may be English, in their original languages — one major and two minors. The major will ordinarily entail the mastery of one literature in its full historical development; the minors may, with the approval of advisers, be limited to the most important works of one literature, or to literary influences, topics, or genres.

The student must demonstrate a reading knowledge of one of the following languages: French, German, Latin, Greek, or, with the consent of the adviser, whatever other language is relevant to, but not part of, the program.

Upon completion of course work, the student will take three written examinations on the major and minor literatures, followed by an oral examination administered by a doctoral committee. Students who pass the qualifying examinations will be advanced to candidacy. They will propose a

Comparative Literature

Comparative Literature Program, Phelps Hall 4216; Telephone (805) 961-3161. Program Chair: Howard W. Clarke.

Advisory Committee

Howard W. Clarke, Ph.D., Harvard University, Professor of Classics and Comparative Literature (*Homer, classical tradition*)

Anne G. Cushing, Ph.D., University of Colorado, Professor of French (*19th- and 20th-century French poetry, literature, and art*)

Paul Z. Hernadi, Ph.D., University of Vienna and Ph.D., Yale University, Professor of

dissertation topic and research plan in consultation with a member of the graduate faculty. Candidates will be questioned about their dissertations in an oral examination.

COMPARATIVE LITERATURE COURSES

LOWER DIVISION

30A-B-C. Masterpieces of World Literature

(4-4-4) Clarke

A survey of western literature.

A: Classical and medieval literature from Homer to Dante.

B: Renaissance and neoclassical literature from Petrarch to Diderot.

C: Romantic and modern literature from Rousseau to Solzhenitsyn.

UPPER DIVISION

100. Introduction to Comparative Literature

(4) Clarke

Prerequisite: upper-division standing.

Method and practice of comparative study. Introduction to masterpieces, theories, themes, and periods of world literature.

105. The Classical Tradition

(4) Clarke, Frost, Sullivan

Prerequisite: upper-division standing.

Studies in the postclassical uses of Graeco-Roman literature and mythology. Neoclassicism; myth and literature.

111. The Picaresque Novel

(4) Hoffmeister

Prerequisite: upper-division standing.

Theory of the picaresque novel; analysis of European masterpieces; using Spanish, French, and English examples as points of departure, but concentrating on the German branch.

115. The Bildungsroman

(4) Staff

Prerequisite: upper-division standing.

A comparative study of the "novel of education" in French, German, and English. Readings from Rousseau, Stendhal, Flaubert, Goethe, Keller, James, and Joyce.

117A-B. Romanticism

(4-4) Pearce, Hoffmeister

Prerequisite: upper-division standing.

Comparative study of the origins and international development of the romantic movement.

120. Medieval Literature

(4) Staff

Prerequisite: upper-division standing.

Studies in the popular, courtly, religious, and heroic traditions of western European literature and drama from the end of the classical world to the beginning of the renaissance. The origin, development, and transmission of characteristic themes.

125. Myth, Comparative Studies

(4) Clarke

Prerequisite: upper-division standing.

A comparative study of world mythology with special emphasis on theories of myth and their relevance to the study of literature.

127. The Tale (Fantastic Tales)

(4) Lundell

Prerequisite: upper-division standing or consent of instructor.

A course dealing with the fantastic tale and the nature of the fantastic from pre-Christian myth to modern science fiction.

131. Surrealism

(4) Cushing

Prerequisite: upper-division standing.

A comparative study of surrealism and its impact on other movements and the arts.

135. Realism

(4) Staff

A comparative study of realism, including the views of major theoreticians.

150. Contemporary Literary Criticism

(4) Staff

Prerequisite: upper-division standing.

May be repeated twice for credit.

Studies in modern and postmodern literary theory. In any one quarter, the course will examine two or three basic orientations such as structuralism, semiotics, hermeneutics, deconstruction, or the esthetics of reception.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in comparative literature. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Independent studies with any faculty member. To permit study of a subject desired by the student but not covered in course offerings.

GRADUATE COURSES

200. Seminar in Comparative Literature

(4) Clarke

Bibliographical and methodological problems of comparative literary study.

205A-B-C. History of Literary Criticism

(4-4-4) Clarke

Criticism from antiquity to the present.

210A. Tragic Drama

(4) Hernadi

Prerequisite: graduate standing.

The theory and practice of tragedy from the Greeks to modern times. Dramatists include Aeschylus, Sophocles, Euripides, Shakespeare, Webster, and Ibsen. Theory includes texts by Aristotle, Hegel, Nietzsche, Girard, Ricoeur, Lukacs, Frye, and others.

594. Special Topics

(1-4) Staff

A special seminar on research subjects of current interest.

596. Directed Reading and Research

(2-18) Staff

Minimum of two units per quarter. No more than half of units required for M.A. may be taken in 596 series. Letter grade only.

Individual tutorial. A written proposal for each tutorial must be approved by the program chair.

597. Individual Study for M.A.

Comprehensive and Ph.D. Examinations

(1-12) Staff

No unit credit allowed toward advanced degree. Enrollment limited to 24 units per examination (12 units maximum in any one examination quarter). S/U grading only.

For individual study with major professor or chair or director of student's program.

598. Master's Thesis Research and Preparation

(2-12) Staff

No unit credit allowed toward advanced degree. S/U grading only.

For research and writing of the Master's thesis.

599. Ph.D. Dissertation Research and Preparation

(2-12) Staff

S/U grading only. Twelve units maximum.

For research and writing of the doctoral dissertation. Instructor should be chair of the student's doctoral committee.

Computer Science (Letters and Science)

Department of Computer Science, Engineering 2106; Telephone (805) 961-4321.

The College of Letters and Science offers a Bachelor of Arts degree in computer science in cooperation with the Department of Computer Science in the College of Engineering. Both the B.A. and B.S. degree programs in computer science are accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. Students begin the curriculum by declaring a pre-computer science major.

Students in other majors should note that enrollment in most computer science courses is restricted to declared pre- and full computer science majors. Students who are admitted to UCSB in a different major (or undeclared) must complete at least 16 units of pre-major courses, including eight units in Computer Science at UCSB, before they may seek admission to the pre- or full computer science major. Further, only those with superior grades (3.0 or higher) in pertinent courses will be admitted.

For additional information concerning the programs in computer science, see the entry of the Department of Computer Science in the College of Engineering, which describes departmental facilities, faculty, advising services, courses offered, career opportunities, and graduate study.

After completing specific prerequisites, students with a bachelor's degree in computer science are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Bachelor of Arts — Computer Science

Preparation for the major. The following courses must be completed with a minimum grade-point average of 2.75 before the student will be admitted to full major status. Courses identified as options are considered equivalent; students may take one of them to satisfy the requirement, but they may not take more of them

for credit Mathematics 3A-B-C, or 7A-B-C, or appropriate portions of 3S; Mathematics 5A or equivalent portions of 5S; Mathematics 8; Mathematics 11A or 5B; Computer Science 10, 11C, 20, 26, 30; Probability and Statistics 121A. One science elective chosen from the following list: Chemistry 1B and 1BL; Physics 2 or 6B and 6BL or 7B. This course is excluded from the pre-major grade-point average requirement, and need not be completed prior to advancement to the full major.

Upon completion of the preparation for the major with a satisfactory grade-point average, the pre-major student should submit a change of major petition, available in the office of the Department of Computer Science. At that time, the student must declare an intent to pursue either a B.A. degree through the College of Letters and Science or a B.S. degree through the College of Engineering.

Upper-division major. Forty-eight upper-division units, including the following, are required: Computer Science 110, 130A-B, 154, 160, 170, 185, 186; Electrical and Computer Engineering 152A; Probability and Statistics 121B. At least seven units of upper-division major field electives must be completed; prior approval of the student's adviser is required.

Courses required for the major or pre-major, lower- or upper-division, inside or outside of the Department of Computer Science, cannot be taken with the passed/not passed grading option. They must be taken for letter grades.

Dance

Division of Dance, Snidecor Hall 2641; Telephone (805) 961-3241. Director: Rona Sande.

Faculty

- Alice Condodina, B.A., Temple University, The Juilliard School, Professor (*modern technique, labanotation, production choreography, repertory*)
 Nolan Dennett, M.A., Western Washington State University, Lecturer (*modern technique*)
 Valerie Huston, B.F.A., University of Utah, Lecturer (*ballet*)
 Delila Moseley, M.A., UC Santa Barbara, Lecturer (*modern technique, jazz, ballet*)
 Frank W. D. Ries, Ph.D., Indiana University, M.A., Cambridge University, Associate Professor (*history, criticism, musical theatre forms, ballet*)
 Rona Sande, M.Ed., College of William and Mary, The Juilliard School, Professor (*modern technique, aesthetics, criticism, choreography, production*)
 Tonia Shimin, Royal Academy, Associate Professor (*modern technique, improvisation, production*)
 Betty Walberg, B.A., Bennington College, Lecturer (*music for dance*)

(In addition to the regular faculty, the Division of Dance appoints professional artists on a one-quarter basis. Recent appointees have been Stephen Koester, Nora Reynolds, Marcia Sakamoto, and Kathryn Posin.)

The Division of Dance offers two degree programs. Although the curriculum for both is studio-centered, with emphasis on performance and choreography, the Bachelor of Fine Arts degree is highly structured and specifically designed for those students who wish to pursue

a professional performing or choreographic career in dance. The Bachelor of Arts option is a more broadly based liberal arts degree and allows more time for students to take courses in areas other than the arts. Departmental offerings include both theoretical and technical aspects of dance, and requirements for each degree include a breadth of experience in related arts and sciences. Repertory-West Dance Company, a professional modern dance company, is in residence at UCSB and selects its apprentices from Dance Division students.

The B.F.A. degree in dance prepares students for advanced professional study toward a performance career or for entrance into M.F.A. or M.A. programs. The B.A. degree is preparatory to further study in such career areas as dance therapy, dance administration, dance history, or dance education. Graduates from either of the degree programs can open their own studios of dance or can teach in private schools or colleges, although a master's or doctoral degree is required, in most instances, for jobs in public colleges or universities.

After completing specific prerequisites, students with a bachelor's degree in dance are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Students who wish to major in dance must audition for placement in the four-year technique series, Dance 46A-F and 156A-F. Portions of the requirement may be waived according to the results of the audition. Students not able to qualify for Dance 46A, as determined by the audition, will not be able to declare a dance major until they are able to qualify for that class. Students should audition in the November or February preceding their admission to the university. Auditions are offered again during fall registration week for those unable to attend the preferred audition dates, as listed above. There can be no guarantee of admission into the program until the audition has been successfully passed. Audition details may be obtained by writing directly to the Division of Dance.

Dance faculty members serve as advisers and are assigned to students through the department office. All new and continuing students are strongly urged to meet with their department adviser at least once each year, and preferably once each quarter. Audition material, a brochure describing course offerings and major requirements, and faculty background information are available from the undergraduate adviser.

The Yvonne Gartrell Memorial Scholarship is offered by the Division of Dance on an annual basis to a deserving incoming dance major. Further information about the scholarship is available from the department office.

Bachelor of Fine Arts — Dance

Preparation for the major. Required: Dance 39, 43, 46A-B-C-D-E-F, 47D-E-F, 50, 51, 52; Dramatic Art 5 or 12; 23D, 25, four units of 29 series or 49; Music 15; Zoology 25 and 25L.

Upper-division major. Note: Entry into the B.F.A. program is by recommendation of dance faculty for currently enrolled students, and by special audition at the beginning of the junior year for transfer students. Completion of the program depends upon successful progress and recommendation of the dance faculty. Assessment of a B.F.A. student's progress is made on a quarterly basis, and provision is made for students who appear unable to complete the B.F.A. program requirements to graduate with the less specialized B.A. degree providing they maintain the standards for that degree.

Sixty-eight upper-division units are required, as follows: Dance 145A-B, 147A-B-C, 149 (4 units), 151A-B-C, 151D or E, 154, 156A-B-C-D-E-F, 157 or 162, 159, 160, 191, as well as six to seven additional units selected from Dance 131, 147P, 148, 149, 150, 151D or 151 E (whichever one was not chosen above), 153, 155, 157 or 162 (whichever one was not chosen above), 158, 160, 161A-B, 189, 190, 193H, 194, 199, Dramatic Art 123, 149.

Bachelor of Arts — Dance

Preparation for the major. Required: Dance 39, 43, 46A-B-C-D-E-F, 47D-E-F, 50, 51, 52; Dramatic Art 23D, four units of 29 series or 49; Zoology 25 and 25L or Zoology 40 and 40L.

Upper-division major. Technical ability and theoretical knowledge must be demonstrated to the satisfaction of the dance faculty before entrance to upper-division study. Students should contact the dance faculty for program planning advice, in order to insure the best possible sequence of study.

Thirty-nine upper-division units are required, as follows: Dance 145A-B, 149 (1 unit), 151A-B-C, 154, 156A-B-C, 157, as well as six additional units selected from Dance 131, 147P, 148, 149, 150, 151D-E, 153, 156D-E-F, 158, 159, 160, 161A-B, 162, 189, 190, 193H, 194, 199, and Dramatic Art 149.

Senior Honors Project

Candidates who are nominated by the faculty, and who elect to complete their degrees with departmental honors, must submit a proposal for an undergraduate thesis project to be completed during the senior year. The project must represent a significant advanced undertaking in an area of either academic research or creative endeavor and must be approved by a member of the faculty who will serve as project supervisor. The student will receive four to eight units of academic credit in Dance 193H. The project will be evaluated by a committee including the supervisor and two additional members of the faculty. Distinction in the Major will be awarded at the time of graduation to those students whose projects are declared acceptable.

DANCE COURSES

LOWER DIVISION

31A-B-C-D. Repertory-West Dance Workshop

(1-3, 1-3, 1-3, 1-3)

May be repeated to a combined maximum of 36 credits. Only 12 units count toward credit in the major.

An intensive curriculum of integrated dance studies comprised of the following segments: A: Modern Dance Technique II (1-3 units). Elementary/intermediate practice of modern dance techniques. B: Improvisation (1-3 units). Exploration of methods of dance improvisation. C: Jazz I (1-3 units). Elementary techniques of jazz. D: Repertory (1-3 units). Study of phrases and thematic material for the elementary student from the choreographic works of the Repertory-West Dance Company.

39. Orientation to Dance

(1-2)

Selected topics of relevance for the dance professional. Career opportunities, current issues and trends, nutrition, dance injury prevention, bibliography, art agency resources, etc.

40. Summer Ballet

(2)

Fundamentals of ballet techniques. (SS)

41. Summer Modern Dance

(2)

Fundamentals of modern dance techniques. (SS)

42A-B-C. Fundamentals of Ballet Technique

(1-1-1)

Courses must be taken in sequence.

An introduction to the elements of ballet.

43. Rhythmic Form and Analysis

(3)

The study of music notation (traditional and non-traditional). Clapping, percussion, vocal, and rhythmic patterning exercises. Score reading, how to listen to music, and examination of the elements and forms of music and their relationship to dance.

44A-B-C. Elementary Movement Techniques

(1-1-1)

Courses must be taken in sequence.

An introduction to the technical aspects of movement as an expressive medium.

45. History and Appreciation of Dance

(4)

Introduction to dance as an art form. A study of the historical periods of dance in close relationship to the other forms of cultural expression. (F,W,S)

45M. History of Musical Comedy Dance

(4)

An investigation into the origins and development of musical comedy and jazz dance. The precursors in folk dance, vaudeville, and tap will be studied leading to their influence of the important choreographers on Broadway and in the film musical.

46A. Modern Dance

(3)

Prerequisite: audition by dance faculty. May be repeated once for credit by dance, dramatic art, and theatre majors only, with instructor recommendation.

Analysis and exploration of the technical aspects of movement as an expressive medium. Includes special emphasis on the temporal aspects of dance. (F)

46B. Modern Dance

(3)

Prerequisite: Dance 46A or audition by dance faculty. May be repeated once for credit by dance, dramatic art, and theatre majors only, with instructor recommendation.

Analysis and exploration of the technical aspects of movement as an expressive medium. Includes the study of basic musical forms as they relate to dance, with an emphasis on themes and phrases. (W)

46C. Modern Dance

(3)

Prerequisite: Dance 46B or audition by dance faculty. May be repeated once for credit by dance, dramatic art, and theatre majors only, with instructor recommendation.

Analysis and exploration of the technical aspects of movement as an expressive medium. Includes work in the area of improvisation. (S)

46D-E-F. Intermediate Modern Dance

(3-3-3)

*Prerequisite: Dance 46C or audition by dance faculty. Dance 46D-E-F may each be repeated once for credit by dance, dramatic art, and**theatre majors only, with instructor recommendation.*

Analysis and exploration of the technical aspects of movement as an expressive medium at the intermediate level. (F,W,S)

47A-B-C. Elementary Ballet

(2-2-2)

Prerequisite: audition by dance faculty. Dance 47A-B-C may each be repeated once for credit by dance, dramatic art, and theatre majors only, with instructor recommendation.

Analysis and exploration of technical and expressive elements of the ballet. (F,W,S)

47D-E-F. Intermediate Ballet

(2-2-2)

Prerequisite: Dance 47C or audition by dance faculty. Dance 47D-E-F may each be repeated once for credit by dance, dramatic art, and theatre majors only, with instructor recommendation.

Further analysis and exploration of technical and expressive elements of ballet. (F,W,S)

50. Fundamentals of Choreography

(2)

Prerequisite: consent of instructor.

A study of the basic elements pertaining to the craft of choreography. Emphasis on exploration of movement variation, breath rhythm, the development of dance phrases, and the use of stage space.

51. Improvisation

(3)

Prerequisite: Dance 46C or consent of instructor. May be repeated once for credit if taken with a different instructor.

The understanding and development of aesthetic awareness in movement through the use of body tensions and energy.

52. Labanotation

(4)

Study of the elements of dance notation and interpretation of movement through reading and writing of the dance score.

60. Summer Jazz Dance

(2)

Fundamentals of the technique of jazz as a theatrical dance form. (SS)

61. Introduction to Jazz Dance

(1)

Prerequisite: Dance 46C or 47C or by audition. Analysis and exploration of the technical and expressive elements of jazz technique.

UPPER DIVISION**131A-B-C-D-E. Repertory-West Dance Workshop**

(2-3, 2-3, 2-3, 1-3, 1-3)

Prerequisite: upper-division standing or consent of instructor. May be repeated to a combined maximum of 36 units credit. Only 12 units will count toward credit in the major.

An intensive curriculum of integrated dance studies comprised of the following segments: A: Modern Dance Technique III (2-3 units). Exploration and practice of modern dance technique for the performing artist. B: Modern Dance Technique IV (2-3 units). Exploration and practice of modern dance technique for the advanced or professional performing artist. C: Choreography (2-3 units). Exploration of dance compositional forms in solo studies. D: Repertory (1-3 units). Study and performance of major choreographic works of the Repertory-West Dance Company.

E: Jazz Workshop (1-3 units). Study of the technique of jazz dance forms with an emphasis on themes and phrases.

145A. The Historical Development of Dance

(4)

Prerequisite: upper-division standing or consent of instructor.

The study of dance as a reflection of cultural history and as a theatrical art form. The history of dance from primitive cultures through the nineteenth century.

145B. The Historical Development of Dance

(4)

Prerequisite: upper-division standing or consent of instructor.

The study of dance as a reflection of cultural history. The dance in the twentieth century.

147A-B-C. Advanced Ballet

(2-2-2)

Prerequisite: Dance 47F or audition by faculty. May be repeated for credit but only one repetition of each may be counted toward the major.

Advanced analysis and exploration of the technical and expressive elements of ballet. (F,W,S)

147P. Ballet: Pointe

(1-2)

Prerequisites: consent of instructor; Dance 47C or equivalent.

Basic techniques in classical ballet pointe work, including barre and center practice.

148. Summer Dance Repertory

(1-6)

Prerequisites: consent of instructor after audition. May be repeated for up to 12 units of credit.

A repertory dance theatre laboratory; the study of contemporary choreographic works culminating in a concert. (SS)

149. Dance Workshop

(1-4)

Prerequisite: consent of instructor. May be repeated for credit. Will not count as upper-division units for the major when taken by freshmen and sophomores.

Projects in performance, production, choreography, and directing (F,W,S)

150. Historical Dance Forms

(3)

Prerequisites: Dance 46C or 47C. Open to dramatic art and theatre majors with consent of instructor.

Analysis of period styles in dance as reflected in theatrical practice from the preclassical through the nineteenth century. Course will include practice in the execution of the particular dance forms studied.

151A-B-C. Choreography

(3-3-3)

Prerequisites: Dance 50 and 51.

Analysis of the elements of choreographic form; styles and trends with experience in development of dance studies; theory and technique of advanced group choreography.

151D. Environmental Choreography

(3)

Prerequisites: Dance 151C and consent of instructor.

A process-oriented study of scoring, designing, and performing dance works in natural landscapes.

151E. Choreography for the Theatre

(3)

Prerequisites: Dance 151C and consent of instructor.

A study of the choreographic problems encountered in theatrical assignments. Analysis of three major theatrical works in terms of choreographic movement style and design.

153. Ethnic Dance Forms

(3)

Prerequisites: Dance 46F or 47F and upper-division standing. May be repeated for up to nine units of credit with consent of department director.

Analysis of the distinctive qualities and characteristics of particular forms of ethnic dance with consideration given to cultural effects on the Americas.

154. Music for Dance

(3)

Prerequisite: Dance 43 or consent of instructor. Structured music/dance improvisations designed to teach music analysis, use of time, structure, rhythm and music vocabulary. Improvisations utilize all periods of music and art-ver-nacular-ethnic music.**155. Organization of Dance Production**

(3)

Prerequisite: consent of instructor.

Theory and techniques of organization, direction, and production of the public dance performance.

156A-B-C. Advanced Modern Dance

(3-3-3)

Prerequisites: Dance 46F or equivalent; audition by dance faculty. Dance 156A-B-C may each be repeated once for credit by dance, dramatic art, ant theatre majors only, with recommendation of instructor.

Advanced analysis and exploration of the technical aspects of dance as an expressive medium. (F,W,S)

156D-E-F. Continuing Modern Dance

(3-3-3)

Prerequisites: Dance 156C or equivalent; consent of instructor. May be repeated for credit but only one repetition of each may count toward the major.

Further analysis and exploration of the technical aspects of dance as an expressive medium. (F,W,S)

157. Criticism and Analysis

(3)

Prerequisite: consent of instructor.

Advanced analysis of choreographic works with practical application in viewing, reviewing, and criticism. (S)

158. Dance Theory and Pedagogy

(3)

Prerequisites: Dance 46F and 151A.

The study of the theoretical aspects of dance movement including an analysis of movement concepts, skills, and teaching principles. Includes practical experience in leading group movement sequences.

159. Musical Resources for Dance

(2)

Prerequisite: Dance 154.

An analysis of music as it relates to choreography. Emphasis on analysis of period styles, music, and dance. Discussion of use of precomposed music for dance, the working process, composer and choreographer, and analysis of dance phrasing, rhythm, and dynamics.

160. Dance Repertory

(2)

Prerequisite: Dance 156A or consent of instructor. May be repeated for up to 12 units of credit.

The study and performance of major choreographic works.

161A. Jazz Dance

(2)

Prerequisite: Dance 46F or 47F or by audition. Jazz as a style and technique. Fundamentals of jazz as an art form for advanced dancers.**161B. Musical Comedy Dance**

(2)

Prerequisite: Dance 46F or 47F or by audition. Dance sequences from musicals, utilizing theatrical dance styles from the 1920s to the present.**162. Aesthetics of Dance**

(4)

Prerequisite: Dance 157.

A critical analysis of aesthetic concepts related to dance.

189. Elements of Performing

(1-2)

Prerequisites: B.F.A. degree candidate with consent of instructor; B.A. candidate may be enrolled with departmental approval. May be repeated for credit up to 4 units.

The study of stage technique for the development of alert, responsive, and dynamic performers. Individual coaching in the elements of performing such as projection, timing, and pre-performance preparation.

190. Apprenticeship — Repertory-West Dance Company

(2-4)

Prerequisite: consent of instructor. May be repeated to a maximum of 12 units credit, but no more than eight units may count toward the major.

Special course for selected students as apprentices to Repertory-West Dance Company. Students will study and analyze the choreographic art in the repertory, understudy the works, and upon occasion, perform with the company locally or on tour. Course will provide students with the opportunity to observe and experience firsthand the integral workings of a professional company.

191. Senior Project

(3)

Prerequisites: B.F.A. candidate, departmental approval, Dance 151A-B-C.

Choreographic or performance project produced as the culminating presentation for the B.F.A. degree. Course includes detailed documentation of the procedure followed during the creation of the final project.

193H. Senior Honors Project

(2-8)

Prerequisites: senior standing; 3.0 university grade-point average; 3.4 departmental grade-point average, unless exempt by petition; faculty nomination. May be repeated for credit to a maximum of 8 units. Four to eight units required; minimum two units per quarter.

Advanced thesis project in either academic research or creative activity, supervised by a faculty adviser. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major.

194. Group Studies in Dance

(1-4)

Prerequisites: consent of instructor and department. May be repeated for credit to a maximum of eight units.

Group projects in selected areas of emphasis.

199. Independent Study in Dance

(1-5)

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in dance. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Projects in choreography or dance research. (F,W,S)

Dramatic Art

Department of Dramatic Art, Snidecor Hall 2641; Telephone (805) 961-3241. Department Chair: Robert G. Egan. Vice-Chair: Rona Sande.

Faculty

Ann Ames, University of the Pacific, Lecturer, *(voice, acting)*
 James Donlon, B.A., Humboldt State University, Lecturer *(movement)*
 Robert G. Egan, Ph.D., Stanford University, Professor *(dramatic literature, criticism)*
 Stanley L. Glenn, Ph.D., Stanford University, Professor *(acting, directing)*
 John Harrop, Ph.D., UC Santa Barbara, M.A., Oxford University, Professor *(acting, directing)*
 Theodore W. Hatlen, Ph.D., Stanford University, Professor Emeritus
 Peter Mark, M.S., The Juilliard School, Professor *(music theater)*
 Judith Olauson, Ph.D., University of Utah, Lecturer with Security of Employment *(acting, musical theatre, women's drama)*
 Robert Potter, Ph.D., Claremont Graduate School, Professor *(playwriting, dramatic literature)*
 William R. Reardon, Ph.D., Stanford University, Professor Emeritus
 Jane Ridley, M.F.A., Ohio State University, Assistant Professor *(acting, directing, stage combat)*
 Richard Schreiber, M.F.A., Boston University, Lecturer *(scenic design)*
 Bert States, D.F.A., Yale University, Professor *(dramatic literature, theory)*
 Leland K. Strasburg, M.F.A., University of Utah, Lecturer with Security of Employment *(scenic and lighting design)*
 Claremarie Verheyen, M.F.A., California Institute of the Arts, Lecturer *(costume and make-up design)*
 Simon Williams, Ph.D., University of East Anglia, Associate Professor *(theatre history)*
 Lucille H. Woolsey, Ph.D., Purdue University, Professor Emerita

The Department of Dramatic Art offers two undergraduate and two graduate degrees: a Bachelor of Fine Arts in theatre, a Bachelor of Arts in dramatic art, a Master of Arts in dramatic art, and a Doctor of Philosophy in dramatic art. The Bachelor of Fine Arts degree is designed to prepare professionally oriented students for a career in theatre. The Bachelor of Arts is a more broadly based degree, with a liberal arts orientation, which allows students wider curricular choices. Both degrees provide a strong background in theatre arts and dramatic literature. The M.A. program is designed to afford a strong

foundation for work in educational or professional theatre or for further graduate study. The Ph.D. is an intensive program concentrating in literary, critical, and historical research, designed to prepare students for careers in university teaching.

UNDERGRADUATE PROGRAM

Students in the Bachelor of Fine Arts program will complete an emphasis in acting or theatre design and technology. Students in the Bachelor of Arts program may concentrate in or select a combination from several areas which are described below.

The major provides ample opportunities for participation in play production and workshop activities in three campus theatres. Auditions for departmental productions will usually be held in the first week of each quarter. Audition material and information is available in the dramatic art production office at the end of each quarter.

Initial counseling for undergraduates is given in the department office by the undergraduate adviser, who will assign each student a faculty adviser; additional counseling is handled by the undergraduate adviser and faculty adviser in concert. Registration for many dramatic art courses requires department approval.

To complete *any* undergraduate program in the Department of Dramatic Art, the following core courses are required:

Preparation for the major. Dramatic Art 5, 20 (fall quarter of freshman year), 29A-B-C-D, 49*, 61 (winter quarter freshman year).

Upper-division major. Dramatic Art 149*, 160A (spring quarter sophomore year), 160E, 162 or English 117A or B, at least two courses from the following: 102, 106, 155, 156, 160B-C-D-F, 161A-B, 164, and eight units of further core electives in dramatic art.

* A minimum of four units from the 49/ 149 series is required. (A maximum of 25 units of the 49/ 149 series will be accepted for graduation.)

Honors Program

Candidates who are nominated by the faculty and who elect to complete their degrees with departmental honors must submit a proposal for an undergraduate thesis project to be completed during the senior year. The thesis must represent a significant advanced undertaking in an area of either academic research or creative endeavor. The student will receive four to eight units of academic credit in Dramatic Art 193H. The project must be approved by a member of the faculty who will work closely with the student as project supervisor, and be evaluated by a committee including the supervisor and two additional members of the faculty. Distinction in the Major will be awarded at the time of graduation to those students whose projects are declared acceptable.

Bachelor of Fine Arts — Theatre

Two emphases are offered under the Bachelor of Fine Arts degree:

Acting

The acting emphasis is highly selective and is geared toward preparation for entry into professional conservatory programs, M.F.A. programs, or professional theatres. A more comprehensive description of the B.F.A. acting emphasis philosophy and policies is available from the department. Auditions are required for entrance to Dramatic Art 15A. The B.F.A. in acting may be declared only upon completion of 15A and with the recommendation of the instructor.

Passage to Dramatic Art 15B and 15C is determined by the acting faculty, using such criteria as clear demonstration of potential talent and professional commitment to the field. Only students who have declared the B.F.A. in acting will be permitted to take Dramatic Art 15B. Passage to advanced acting (Dramatic Art 151A) uses similar criteria, but more stringent judgment is applied. Transfer students who wish admission into the acting program should request information from the department.

To complete the program for the B.F.A. in acting, the following courses are required, in addition to the core courses. Lower-division: Dramatic Art 10A-B-C (must be taken concurrently with 15A-B-C), 11A-B-C (concurrently with 15A-B-C), 15A-B-C, 26, Dance 44A-B or 44B-C, Physical Activities 1-18D. Upper-division: a total of 70-74 upper-division dramatic art units is required inclusive of core and emphasis courses: Dramatic Art 110A-B-C (concurrently with 151A-B-C), 110D, 111A-B-C (concurrently with 151A-B-C), 112, 149 (six additional units beyond the core requirements), 151A-B-C-D-F, and additional upper-division dramatic art courses to bring the unit total to 70-74. Students may not enter the 151 series until they have completed 20, 26, 29A-B-C-D, 61, and 160A.

Theatrical Design and Technology

The theatrical design and technology emphasis is a two-year specialization for juniors who want intensive and practical training which prepares them for work in professional, regional, or academic theatre. The specialization also prepares students for entry into an M.F.A. program. A sound understanding of theatrical production process developed in lower-division courses is prerequisite. Students who wish to enter the program should schedule an interview with a faculty designer where they will present their portfolio and discuss program requirements. A careful outline of course work will be planned which includes the required courses below and others to strengthen observed weaknesses.

To complete the program for the B.F.A. in theatrical design and technology, the following courses are required, in addition to the core courses. Lower-division: Dramatic Art 21A-B-C, 22, 23, 25, 26, 27A-B-C. Upper-division: a total of 78-83 upper-division dramatic art units are required inclusive of core and emphasis courses: Dramatic Art 122, 123, 125, 127A-B-C (taken during junior year), 128 (taken fall quarter senior year), 132 or 133, eight units from 121 or 129 or 131 or 134, 149 (twelve additional units beyond core requirements), 152 or 153A, 153E, and 190.

Bachelor of Arts — Dramatic Art

The aim of the department is to provide a comprehensive undergraduate education in dramatic art based on a foundation of core requirements, including practical experience in the theatre arts (acting, theatre technology, and production) and coursework in dramatic theory and literature. An undergraduate major in dramatic art may lead to specialized creative work in the profession, to graduate work in preparation for teaching and research, or to careers in law, arts administration, or business, either within or outside the arts and entertainment industry.

For the B.A. in dramatic art, students must complete, inclusive of core requirements, a minimum of 36 upper-division units in dramatic art. In selecting these courses, students may focus on any one area or on a combination of the areas outlined below. After an initial interview with the departmental undergraduate adviser, students should plan their coursework in consultation with a faculty adviser.

Directing

This is the most structured and specialized area of study within the B.A. program, and is intended to provide serious experience of the director's function in today's theatre. It offers a sound preparation for an M.F.A. in directing, leading toward a professional career in the field, which may include directing on various educational levels, including secondary school and college, as well as community theatre.

The directing emphasis requires Dramatic Art 15A, 22, 23, and 25, in addition to B.A. core requirements. Before enrolling in Dramatic Art 153A, the student must have completed all lower-division requirements, including 29A-B-C-D. (Transfer students who enroll at the junior level may, at the discretion of the department, make up some of these prerequisites while they take the 153 series.) Required upper-division courses are: 153A-B-C (must be taken during the junior year); 153D (a senior project in directing); 154; eight units from the following: 26, 102, 104A-B-C, 106, 126, 132, 133, 161A-B. Students pursuing the directing emphasis are required to serve as assistant stage manager on a major production, or as stage manager on a student-directed production. Credit will be given for 29D, 49, or 149. Afterwards, students in the directing emphasis must serve as stage manager for a major production, for which Dramatic Art 190 credit will be offered. Directing students are advised to elect Art 1 and Music 15 to satisfy General Education requirements in the fine arts area.

Dramatic Literature, Theory, and Theatre History

A distinctive feature of the UCSB Department of Dramatic Art is its wide range of offerings in dramatic literature, theory, and theatre history (see course descriptions of Dramatic Art 106, 155, 156, 160A-B-C-D-E-F, 161A-B, 162, and 164.) These courses may be supplemented with dramatic literature courses, in the original languages and in translation, in numerous humanities departments at UCSB.

Playwriting

The playwriting program is based on a year-long course, Dramatic Art 104A-B-C, and includes public reading, visiting lecturers, the yearly Original Scripts Workshop, and periodic departmental productions of original scripts. Enrollment in Dramatic Art 104A is open to all students without prerequisites; continuation in 104B-C requires permission of the instructor. The latter courses may be repeated for credit, and further work in this area might include additional courses in dramatic literature, creative writing, and theatre arts, and perhaps an internship as dramaturg on a departmental production. Coursework in screenwriting is available through the Film Studies Program.

Theatre Design and Technology

All lower-division courses in the area of design and technology are open without prerequisites to B.A. students, and their active participation is encouraged. With the exception of Dramatic Art 132 and 133, all upper-division courses have lower-division prerequisites. Thus a student with a special design interest such as lighting or costuming may pursue it through a sequence of courses.

GRADUATE PROGRAM

Master of Arts — Dramatic Art

The M.A. program is designed to afford a strong foundation for work in educational or professional theatre or for further graduate study.

Degree Requirements

Forty-eight units are required for the M.A. degree; at least 28 of these must be taken in graduate courses numbered 200 and above. Eight of these units involve a master's thesis project. Furthermore, eight must be from the 235 sequence, with at least four units from 235C. At the completion of class work, a two-hour oral examination is required.

Required course work. Dramatic Art 200 (in fall quarter); 593 (eight units); five courses (with at least eight units above 200) from 102, 103, 106, 155, 160A-F, 161A-B, 162, 164, 210A-E, 272A-G, 275, 276, 280A-B, 294; four courses (with at least eight units from 235A-C) from 101A-D, 104A-C, 120, 121, 122, 123, 125, 127, 128, 131, 133, 140, 141, 149, 151A-C, 152, 153A-D, 154, 191, 194, 235A-C. A higher standard of work than is normally expected of undergraduate students will be required of graduate students taking upper-division courses.

Only students who have clearly revealed their scholarly and creative ability will be permitted to take doctoral work; the faculty will make this decision at the conclusion of the M.A. program.

Playwriting Program. With the approval of the program director, graduate students may undertake a playwriting project in partial fulfillment of M.A. degree requirements. Interested M.A. applicants should submit a sample of their work to the playwriting program director.

Doctor of Philosophy — Dramatic Art

The Ph.D. program, an intensive program concentrating on literary, critical, and historical research, is designed to prepare students for careers in university teaching.

Admission

General requirements for admission to graduate status must be fulfilled. Candidates must hold an M.A. degree from UC Santa Barbara or another institution.

Degree Requirements

A heavy sequence of courses in dramatic literature, theory, and criticism is taken over a period of two years. At the end of the second year, or the start of the third, the candidate must pass written and oral examinations in dramatic literature, theory and criticism, history and theory of acting and directing, and a special area of interest, as well as the university oral examination. Upon successful completion of these examinations, the student will be recommended for advancement to candidacy.

Prior to taking the comprehensive examination, the candidate must complete the language requirement. There are three options for fulfilling the requirement. Option 1: Two languages at reading level; one language must be French, German, or Russian. Option 2: Any foreign language needed for doctoral research may be pursued to a level of oral and written proficiency. Such proficiency will be attested by an examination administered by the appropriate foreign language department. Option 3: A series of breadth or depth courses effectively tailored to individual needs by the graduate adviser and approved by the Graduate Division may be offered instead of a language. No dissertation utilizing materials in another language is possible under Option 3.

The third year will normally be spent researching and writing the dissertation. Approximately 36 units will be devoted to dissertation work. Doctoral candidates in dramatic art are required to serve as teaching assistants for six quarters.



Drama students meet with veteran actor and playwright Trevor Baxter, one of five members of the Royal Shakespeare Company who spent two weeks in residence at UCSB. The performing and teaching residency was arranged through ACTER (Alliance for Creative Theatre, Education & Research), a national program founded and directed by English professor Homer Swander.

DRAMATIC ART COURSES

LOWER DIVISION

5. Introduction to Acting

(3) Staff
Introduction for majors and nonmajors to the multiple problems of the actor's art and craft. (F,W,S)

6S. Acting Workshop

(2-4) Staff
Prerequisite: consent of instructor.
Laboratory for voice, movement, and acting. (SS)

10A-B-C. Movement for the Stage

(2-2-2) Donlon
Prerequisites: completion of Dramatic Art 5; concurrent enrollment in Dramatic Art 15A-B-C. Dramatic Art 10A-B-C may each be repeated once for credit with recommendation of instructor.

Intense physical training designed to produce a neutral, dynamic, and expressive bodily instrument.

11A-B-C. Voice Laboratory

(2-2-2) Staff
Prerequisites: completion of Dramatic Art 5; concurrent enrollment in Dramatic Art 15A-B-C. Dramatic Art 11A-B-C may each be repeated once for credit with recommendation of instructor.

A fundamental approach to voice for the actor with emphasis on vocal production, articulation, and quality; plus physical relaxation techniques.

12. Fundamentals of Mime

(3) Donlon
A basic introductory study of movement theatre involving exercises and projects in classical

mime. Includes some work in mask and clowning technique.

13. Musical Theatre Workshop

(2) Olason
Prerequisite: consent of instructor based on informal audition.
Singing, movement, and dance through the medium of music theatre, culminating in a showcase performance.

14. Acting Workshop

(3) Staff
Prerequisites: Dramatic Art 5. Course restricted to sophomores and above. Designed for nonspecialists in drama. May be repeated once for credit.
Exploration, performances, and criticism of scenes from a broad range of dramatic scripts with the stress upon the actor's perspective. Practical skills will be taught to make the physical exploration of the text a valid exercise.

15A. Fundamentals of Acting

(4) Staff
Prerequisites: Dramatic Art 5; recommendation by audition. Student must take Dramatic Art 10A and 11A in conjunction with this course. May be repeated once for credit by recommendation of instructor.
Improvisation and foundation work in approach to text to develop the beginning actor's technique and creative capacity. (F)

15B. Fundamentals of Acting

(4) Staff
Prerequisites: Dramatic Art 15A and consent of instructor. Student must take Dramatic Art 10B and 11B in conjunction with this course. May be repeated once for credit by recommendation of instructor.
Problems in scene analysis, characterization, and presentation. (W)

15C. Fundamentals of Acting

(4) Staff
Prerequisites: Dramatic Art 15B and consent of instructor. Student must take Dramatic Art 10C and 11C in conjunction with this course. May

be repeated once for credit by recommendation of instructor.

Further development of characterization, interpretation, and techniques of emotional focus in acting. (S)

20. Survey of Technical Theatre

(4) Strasburg

Survey of scenographic techniques including technical production, set, and costume design. (F)

20S. Survey of Technical Theatre

(3) Strasburg

Survey of scenographic techniques including technical production, set, and costume design. (SS)

21A-B-C. Theatre Production Techniques

(2-2-2) Staff

Students who have received credit for Dramatic Art 21 may not take Dramatic Art 21A.

A: Basic stagecraft technique including organization and operation of theatre facilities and stage equipment. Survey of production materials.

B: Basic lighting technique including organization and operation of theatrical lighting equipment.

C: Basic costume technique including production organization, equipment, materials, fabric recognition, and theatrical costume construction.

22. Scenic Design

(2) Staff

Prerequisite: Dramatic Art 20 and 21A; or consent of instructor.

Projects in the interpretation of plays through scenic elements with concentration on the design process and the dramatic use of space.

23. Stage Lighting Design

(2) Strasburg

Prerequisites: Dramatic Art 20 and 21B; or consent of instructor.

Lecture-demonstration in instrumentation, color in light, control equipment, and basic lighting design theories.

23D. Dance Lighting Design

(4) Staff

Prerequisite: dance major or consent of instructor.

Lecture-demonstration in instrumentation, color in light, control equipment, and basic lighting theories. Practical application through laboratory assignments and studio productions.

25. Costume Design

(2) Verheyen

Prerequisites: Dramatic Art 20 and 21C; or consent of instructor.

Exploration of basic elements and principles of design as applied to the theory of theatrical clothing design.

26. The Art and Craft of Stage Makeup

(2) Verheyen

Prerequisite: priority to majors.

The theory and practice of stage makeup as applied to juvenile, character, and period roles.

27A. Theatre Graphics: Perspective

(2) Staff

Prerequisites: Dramatic Art 20 and 21A; or consent of instructor.

Drawing for the theatre. Emphasis on line drawing and perspective.

27B. Theatre Graphics: Technical

(2) Staff

Prerequisites: Dramatic Art 20 and 21B; or consent of instructor.

Drawing for the theatre. Emphasis on technical drawing.

27C. Theatre Graphics: Figure

(2) Staff

Prerequisites: Dramatic Art 20 and 21C; or consent of instructor.

Drawing for the theatre. Emphasis on the figure for costumers.

29A. Scenic Practicum

(1-3) Staff

May be repeated for up to three units of credit.

Empirical understanding of methods of assembly and materials for stage scenery. Shop organization and operation are experienced during the construction process.

29B. Lighting Practicum

(1-3) Staff

May be repeated for up to three units of credit.

Empirical understanding of optical properties of lighting units, available hanging positions and apparatus, lighting control, electrical safety and stage crew organization.

29C. Costume Practicum

(1-3) Staff

May be repeated for up to three units of credit.

Empirical understanding of methods of assembly and materials for stage dress. Costume shop organization and operation are experienced during the construction process.

29D. Run Crew Practicum

(1-3) Staff

May be repeated for up to three units of credit.

Empirical understanding of backstage organization and operation during live performance.

49. Theatre Workshop

(1-6) Staff

A maximum of 25 units of Dramatic Art 49 and 149 combined may be accepted for credit.

Projects in costume, scenery, lighting, acting, directing.

60. Appreciation of Theatre

(4) Staff

Prerequisite: for the nonmajor.

This introductory course in playgoing surveys the general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, videotapes, and live performances will be studied whenever possible.

60S. Appreciation of Theatre

(3) Staff

Prerequisite: for the nonmajor.

This introductory course in playgoing surveys the general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience. Films, videotapes, and live performances will be studied whenever possible. (SS)

61. Dramatic Structure

(3) States

The principles of dramatic form and structure as examined in a range of representative plays from ancient to modern times. (W)

UPPER DIVISION

101A. Theatre for Young Audiences

(2) Staff

May be repeated for up to four units of credit.

Study of special techniques involved in producing plays for this audience. Analytical survey of writing, staging, and acting for young audiences including story theatre, reader's theatre, and creative dramatics. Content varies. (F)

101B. Theatre for Young Audiences

(2) Staff

May be repeated for up to four units of credit.

Class to produce a play for public performance. Highest professional standards demanded in all aspects of production. Content varies. (F)

101C. Creative Plays for Young Audiences

(4) Staff

Prerequisites: Dramatic Art 101A-B; consent of instructor. May be repeated for up to eight units of credit.

Creation of a play project by the class through creative dramatics and improvisational theatre techniques. Completed projects to be toured to schools in spring quarter. Content varies. (W)

101D. Touring Plays for Young Audiences

(4) Staff

Prerequisites: Dramatic Art 101A-B-C; consent of instructor. May be repeated for up to eight units of credit.

Final rehearsal and preparation of completed project for tour. Will tour 10-12 elementary schools. Content varies. (S)

102. History of the Theatre

(4) Williams

The history of the playhouse, the practitioner, and dramatic production from the Greeks to the present.

104A. Playwriting: An Introductory Course

(4) Potter

Exploration of ideas for the stage. Experiments with mime, monologue, dialogue, scene. Characters and action. Resources of the stage, principles of economy. Analysis of scripts on paper and in production. A series of written assignments and a final project (scenes from work in progress) (F)

104B. Advanced Playwriting

(4) Potter

Prerequisites: completion of Dramatic Art 104A (or submission of written material) and consent of instructor. May be repeated for up to eight units of credit.

Development of selected student projects into completed working scripts; further studies in script analysis. Writing and rewriting. (W)

104C. Script Workshop

(1-4) Potter

May be repeated for up to eight units of credit.

A. Original scripts workshop; rehearsal and production of selected student scripts, in collaboration with student director, actors, etc. B. Staged reading series: development of scripts for public staged readings. (S)

106. Dramatic Theory and Criticism

(4) Egan

Prerequisite: upper-division standing.

Intensive discussion of several major theories of the drama and an application of those theories to selected plays.

110A-B-C. Advanced Movement for the Stage

(2-2-2) Donlon

Prerequisites: completion of Dramatic Art 15A-B-C; concurrent enrollment in Dramatic Art 151A-B-C. Dramatic Art 110A-B-C may each be repeated once for credit by recommendation of instructor.

A continuation of the Dramatic Art 10 series with increased focus on period movement, tumbling, clowning, and physical characterization.

110D. Senior Movement Projects

(3) Staff

Prerequisites: senior standing and completion of Dramatic Art 110A-B-C.

Creative projects utilizing skills learned in prior movement classes.

111A-B-C. Advanced Voice Laboratory

(2-2-2) Staff

Prerequisites: completion of Dramatic Art 15A-B-C; concurrent enrollment in Dramatic Art 151A-B-C. Dramatic Art 111A-B-C may each be repeated once for credit by recommendation of instructor.

Advanced problems in voice for the actor with continued emphasis on craft, plus the creative and expressive uses of the voice with the body.

112. Senior Voice Laboratory

(2) Staff

Prerequisites: completion of Dramatic Art 111C; concurrent enrollment in Dramatic Art 151D. May be repeated once for credit.

Seminar in advanced voice work for senior students in B.F.A. acting program. Concentration upon the application of vocal techniques to particular characterizations.

113S. Musical Comedy Performance Workshop

(4-12) Staff

Prerequisites: Dramatic Art 5 or equivalent and consent of instructor.

Exploration of the performance aspects of the musical comedy genre culminating in showcase performances. Integrated curriculum includes voice techniques, physical warm-up, musical theatre staging and movement, and basic choreography. (SS)

115. Repertory Theatre

(1-6) Staff

Prerequisites: consent of instructor. Enrollment by audition only. May be repeated for up to 12 units of credit.

A repertory theatre workshop emphasizing styles of acting culminating in production.

121. Advanced Technical Theatre Production

(4) Strasburg

Prerequisite: consent of instructor.

Advanced problems in planning, drafting, construction, mounting, and rigging of stage scenery.

122. Advanced Scenic Design

(2) Staff

*Prerequisite: consent of instructor.**Recommended only to the most advanced students.*

Concentration on set design problems of various styles.

123. Advanced Stage Lighting Design

(2) Strasburg

Prerequisite: consent of instructor.

Intensive work in lighting design.

125. Advanced Costume Design

(2) Verheyen

*Prerequisite: consent of instructor.**Recommended only for advanced design students.*

Execution of theoretical costume design projects for classical as well as contemporary drama, dance, and opera.

126. Advanced Makeup

(2) Staff

Prerequisite: Dramatic Art 26 or equivalent.

Emphasis on character makeup and new prosthetics construction and application techniques.

127A. Advanced Theatre Graphics: Scenic Rendering

(2) Staff

Prerequisites: Dramatic Art 22 and 27A-B-C; or consent of instructor.

Advanced drawing for theatre. Emphasis on rendering techniques and color.

127B. Advanced Theatre Graphics: Rendering in Light

(2) Staff

Prerequisites: Dramatic Art 23 and 27A-B-C; or consent of instructor.

Advanced drawing for theatre. Emphasis on the use of light and shade to express elements of design.

127C. Advanced Theatre Graphics: Costume Rendering

(2) Staff

Prerequisites: Dramatic Art 25 and 27A-B-C; or consent of instructor.

Advanced costume rendering for theatre. Drawing of light and shade on figure and fabric.

128. Advanced Production: the Portfolio

(4) Staff

Prerequisites: senior standing and consent of instructor.

Exploration of advanced theatre projects with concentration on individual portfolios.

129. Painting for the Stage

(2) Staff

Prerequisites: Dramatic Art 21A and 27A.

Advanced work in scenic painting including special textures, foliage, trompe-l'oeil effects as used for stage.

131. Advanced Costume Construction

(2) Verheyen

Prerequisites: Dramatic Art 21 and 29C; or consent of instructor.

Exploration of advanced draping, drafting, and tailoring techniques through production related projects.

132. Historic Interiors and Furnishings

(4) Verheyen

Prerequisites: upper-division standing or consent of instructor.

A survey of the development of furnishings, interiors, and architecture from the Egyptians to the present as related to the changing patterns of culture.

133. History of Costume

(4) Verheyen

A survey of the development of western clothing and decor costume from the Egyptians to the present as related to the changing patterns of culture.

134. Advanced Theatrical Crafts

(2) Staff

Prerequisites: Dramatic Art 21A-B-C.

Concentration on special materials and techniques utilized in theatrical productions including decorative and three-dimensional art.

141. Reader's Theatre

(4) Staff

Study of the different concepts of reader's theatre and practical experience in the preparation and performance of dramas, dramatic poetry, and novels in the reader's theatre style.

149. Theatre Workshop

(1-6) Staff

Prerequisite: upper-division standing. A maximum of 25 units of Dramatic Art 49 and 149 combined may be accepted for credit.

Projects in costume, scenery, lighting, acting, directing.

151A. Advanced Acting: Greek Tragic Style

(4) Staff

Prerequisites: recommendation from Dramatic Art 15C and consent of instructor. By audition for transfer students. Students must take Dramatic Art 110A and 111A in conjunction with this course. May be repeated once for credit by recommendation of instructor. Scenes and exercises exploring the conventions of Greek tragedy.**151B. Advanced Acting: Shakespearean Tragedy**

(4) Staff

Prerequisites: Dramatic Art 151A and consent of instructor. Students must take Dramatic Art 110B and 111B in conjunction with this course. May be repeated once for credit by recommendation of instructor.

Scenes and exercises exploring the conventions of Shakespearean tragedy.

151C. Advanced Acting: The Craft of Comedy

(4) Staff

Prerequisites: Dramatic Art 151B and consent of instructor. Students must take Dramatic Art 110C and 111C in conjunction with this course. May be repeated once for credit by recommendation of instructor.

Scenes and exercises in various modes of comic acting ranging from farce to high comedy.

151D. Advanced Acting: Modern Trends

(4) Staff

Prerequisites: Dramatic Art 151C and consent of instructor.

Study and performance of contemporary acting developments.

151E. Acting for the Camera

(4) Harrop

Prerequisites: Dramatic Art 151C or equivalent; consent of instructor. May be repeated once for credit.

Course explores advanced problems of characterization in naturalistic theatre. It is geared as far as possible to individual actor's needs, and focuses upon technical demands of acting for the camera in both television and film situations. Course includes in-studio filming of scenes.

151F. Senior Auditions

(3) Staff

Prerequisites: Dramatic Art 151C and consent of instructor. May be repeated once for credit. Preparation and study of material and techniques for professional and graduate school audition.**151G. Alternate Acting Styles**

(4) Staff

Prerequisite: senior standing in the B.F.A.-Acting emphasis.

A return to realism and continued work on various styles.

152. Introduction to Stage Directing

(4) Staff

Basic principles and practice of directing. Lectures, demonstrations, and projects to give the nonspecialist a general idea of the directorial process.

153A. Stage Directing

(5) Glenn, Harrop

Prerequisites: Dramatic Art 15A, 22, 23, 61, and consent of instructor. Limited enrollment. Lectures and demonstrations on basic theoretical principles. Tutorial instruction in textual study and formal analysis leading to major promptbook projects.

153B. Techniques of Directing

(4) Glenn, Harrop

Prerequisites: Dramatic Art 153A and consent of instructor.

Laboratory in directorial scene work.

153C. Directorial Production

(4) Glenn, Harrop

Prerequisites: Dramatic Art 153A-B and consent of instructor.

Full directorial responsibility for the mounting of a one-act play.

153D. Projects in Directing

(1-6) Glenn, Harrop

Prerequisites: Dramatic Art 153C and consent of instructor. May be repeated for credit.

Special projects for the advanced director.

153E. Senior Projects

(1-6) Staff

Prerequisites: senior standing and consent of instructor. May be repeated for up to six units of credit.

Special projects to each area of concentration.

154. Opera Directing

(4) Mark

Prerequisite: advanced directing students at the undergraduate and graduate level.

Examination of the director's role in operatic and music theatre production.

155. American Drama

(4) Staff

History of the American drama and theatre from 1895 to the present. Equal treatment given to major plays and to important theatre companies of this century.

156. American Women Playwrights

(4) Olason

Prerequisite: upper-division standing or Dramatic Art 61.

A study of dramatic literature written by American women. Emphasis placed upon the evolution of women's playwriting from 1930s to the present time.

160A. Development of Dramatic Art

(4) Glenn, Williams

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theatre and artistic styles, and critical theory from its origin in the western world through the Greeks to the Roman Empire. (S)

160B. Development of Dramatic Art

(4) Potter

Theatre and drama from the medieval cathedrals to the Jacobean playhouse, including popular drama, Commedia dell'Arte, Marlowe, Jonson, and other dramatists of the Elizabethan theatre, excluding Shakespeare.

160C. Development of Dramatic Art

(4) Egan

A study of French drama of the seventeenth century and British drama of the Restoration and eighteenth century, focusing on the plays of Corneille, Moliere, Racine, Wycherley, Congreve, Sheridan, and others, and dealing with related developments in theatre, culture, and society.

160D. Development of Dramatic Art

(4) States

A study of the evolving forms and styles of drama and theatre from 1700 to the rise of realism and expressionism, including plays by Schiller, Sheridan, Buechner, Scribe, Zola, Gogol, Turgenyev, Hauptmann, Wedekind, and others.

160E. Development of Dramatic Art

(4) Egan, Williams

A study of European drama in the period from Ibsen to World War I, focusing on the plays of Ibsen, Strindberg, Chekhov, Shaw, and others, and dealing with related developments in theatre, culture, and society.

160F. Development of Dramatic Art

(4) States

A study of the evolving forms and styles of drama and theatre from World War I to the present, including plays by Shaw, Pirandello, Brecht, O'Neill, Miller, Sartre, Beckett, Ionesco, Pinter, and others.

161A. The Rise of the Professional Theatre

(4) Williams

Prerequisite: upper-division standing.

The history of the theatre from the mid-seventeenth century to the end of the nineteenth century. Focus will be on the rise of the acting profession, the establishment of standing theatres, and the evolution of playhouse architecture, scene design, and physical production. Plays that highlight these issues will be read and discussed.

161B. The Modern Theatre: Theory and Practice

(4) Williams

Prerequisite: upper-division standing.

The history of the theatre from the late nineteenth century to the present day. Readings on the theory of major theatrical innovators and an investigation of how and whether these theories were realised on stage. Particular emphasis on the work of Stanislavsky, Appia, Craig, Meyerhold, Piscator, Brecht, Artaud, Barrault, Wieland, Wagner, and the contemporary avant-garde.

162. Shakespeare on Film and Stage

(4) Potter

An investigation of Shakespeare's plays through the media of performance; viewing of Shakespearean productions on film and videotape, in classroom rehearsal, and in stage performances as available; reading and critical analysis of selected Shakespearean plays.

164. Music-Drama and Opera

(4) Mark

Introduction to and survey of masterpieces of music-drama and opera. Exploration of the relationship of musical and theatrical values.

190. Production Administration

(3) Staff

Prerequisites: consent of instructor and department chair approval. May be repeated for up to six units of credit.

Workshop for advanced students functioning as assistants to directors, designers, and technical directors. Portfolio, promptbook, or paper required.

191. Theatre Management

(4) Staff

Prerequisite: consent of instructor.

Business organization and management for the educational, community, and professional theatre, including budgeting, publicity, public relations, and box office principles.

192. Projects in Music Theatre

(4) Mark

Prerequisite: consent of instructor. May be repeated once for credit.

Special projects for directors, designers and technical students in practical musical theatre production.

193H. Senior Honors Project

(2-8) Staff

Prerequisites: senior standing; 3.0 university grade-point average; 3.4 departmental grade-point average, unless exempt by petition; faculty nomination. Four to eight units required; minimum two units per quarter. May be taken for up to eight units of credit.

Advanced thesis project in either academic research or creative activity, supervised by a faculty adviser. Students successfully completing the project, as evaluated by a three-person committee, will graduate with Distinction in the Major.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisites: senior standing and consent of the department chair. Enrollment normally limited to 12 or fewer students. May be repeated for up to eight units of credit.

Intensive study, research, and project preparation.

199. Independent Studies in Dramatic Art

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in dramatic art. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

GRADUATE COURSES**200. Introduction to Graduate Studies in Dramatic Art**

(4) Staff

Prerequisite: graduate standing.

Discussion and utilization of various research techniques. Bibliographical work accentuated.

210A. Tragic Drama

(4) States

Prerequisite: graduate standing.

The theory and practice of tragedy from the Greeks to modern times. Dramatists include Aeschylus, Sophocles, Euripides, Shakespeare, Webster, and Ibsen. Theory includes texts by Aristotle, Hegel, Nietzsche, Girard, Ricoeur, Lukacs, Frye, and others.

210B. Comic Drama

(4) States

Prerequisite: graduate standing.

The theory and practice of comedy from the Greeks to modern times. Dramatists include Aristophanes, Shakespeare, Moliere, Sheridan, Shaw, Stoppard, and others. Theory includes texts by Kierkegaard, Bergson, Freud, Koestler, Cook, Frye, Langer, and others.

210C. Drama of Mixed Genres

(4) Egan

Prerequisite: graduate standing.

Masterpieces of intermingled forms from Greeks to the present. Dramatists include Euripides, Shakespeare, Moliere, Pinter, and others.

210D. American Theatre and Drama to 1895

(4) Staff

Prerequisite: graduate standing.

From origins of both to the rise of realism and the Theatrical Syndicate.

210E. American Theatre and Drama from 1895
(4) Staff
Prerequisite: graduate standing
From the Theatrical Syndicate and the new art and drama movement to the present day.

235A. Advanced Problems in Directing
(4) Glenn, Harrop
Prerequisite: graduate standing.
Discussion of advanced problems in directing; practical application and projects.

235B. Advanced Problems in Design
(4) Strasburg
Prerequisite: graduate standing. May be repeated for up to eight units of credit.
Discussion of advanced problems in design; practical application and projects.

235C. Advanced Problems in Theatre Practice
(1-4) Staff
Prerequisite: graduate standing. May be repeated for up to 12 units of credit.
Discussion of problems in repertory; practical application of specialized individual projects.

255. Seminar in Film
(3) Staff
Prerequisite: Film Studies 46 or Philosophy 136.
Elements of film and its critical vocabulary, studied through the examination of the work of a distinguished director. Typical topics would include: visual style, expressive movement in film, character, acting, symbolism, describing a film, reality and fantasy, photography.

272A. Seminar in Theories of Acting and Directing
(4) Egan, Harrop
Prerequisite: graduate standing.
Examination of the major theoretical works of the past and present on acting and directing.

272B. Seminar in Dramatic Theory: Aristotle to Lessing
(4) States
Prerequisite: graduate standing.
Detailed study of theories from *The Poetics* to the *Hamburg Dramaturgy*.

272C. Seminar in Modern Dramatic Theory
(4)States
Prerequisite: graduate standing.
Major theories and concepts from Lessing to Langer.

272D. Seminar in History of Physical Theatre
(4) Williams
Prerequisite: graduate standing.
Examination of the physical theatre and stage design from ancient Greece to the present.

272F. Seminar in Nonwestern Drama and Theatre
(4) Staff
Prerequisite: graduate standing.
Oriental and Indian styles in drama and theatre.

272G. Seminar in Dramatic Literature and Theatre History
(4) Staff
Prerequisite: graduate standing.
Varies in content from year to year.

275. Seminar in Medieval Drama
(4) Potter
Prerequisite: graduate standing.
An exploration of the sacred and profane traditions of drama in medieval England and the Continent, with close attention to staging practices

and the social and intellectual context of the times. (Offered alternate years.)

276. Seminar in Shakespeare
(4) Egan
Prerequisite: graduate standing.
Study of Shakespeare's dramatic artistry through intensive discussion of selected plays and analysis of criticism, staging, and sources. (Offered alternate years.)

280A. Seminar in Modern British Drama: Shaw and Contemporaries
(4) Egan
Prerequisite: graduate standing.
Study of major British playwrights of the late nineteenth and earlier twentieth century, focusing especially on George Bernard Shaw. (Offered alternate years.)

280B. Seminar in Modern British Drama: Osborne to Present
(4) Egan
Prerequisite: graduate standing.
Study of major contemporary playwrights. (Offered alternate years.)

294. Studies in Drama
(4) Staff
Prerequisite: graduate standing.
Studies in drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. (Will be offered irregularly.)

500. Teaching: Methods and Practice
(4) Staff
Prerequisites: graduate standing and current appointment as a departmental teaching assistant. May be repeated for credit. Required of all teaching assistants.
Introduction to the problems and techniques of teaching dramatic art, through teaching responsibilities in departmental courses and through consultation with supervising faculty members.

593. Master's Thesis Project, Research and Creative
(1-8) Staff
Prerequisite: consent of instructor. May be taken for a maximum of eight units. S/U grade.

596. Directed Reading and Research
(2-8) Staff
Prerequisite: consent of instructor.
Individual tutorial. A written proposal for each tutorial must be approved by the department chair.

597. Individual Study for Master's Comprehensive and Ph.D. Examinations
(1-12) Staff
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree. S/U grade.
Individual study for master's comprehensive and Ph.D. examinations.

599. Dissertation Research and Preparation
(1-12) Staff
Prerequisite: consent of chair of student's doctoral committee. Normally limited to total of 36 units. S/U grading
Dissertation research and preparation.

Economics

Department of Economics, North Hall 2127; Telephone (805) 961-3670. Department Chair: Perry Shapiro.

Faculty
Alec P. Alexander, Ph.D., UC Berkeley, Professor (*microeconomics, organization theory and management*)
Mortimer Andron, Ph.D., University of Illinois, Professor Emeritus
Valerie Bencivenga, Ph.D., University of Toronto, Assistant Professor (*econometrics, macroeconomics, economic development*)
George J. Borjas, Ph.D., Columbia University, Professor (*labor economics, microeconomic theory*)
Stephen Bronars, Ph.D., University of Chicago, Assistant Professor (*labor economics*)
Margriet Caswell, Ph.D., UC Berkeley, Assistant Professor (*agricultural and resource economics*)
William S. Comanor, Ph.D., Harvard University, Professor (*industrial organization, applied microeconomics*)
Thomas F. Cooley, Ph.D., University of Pennsylvania, Professor (*econometrics, macroeconomics*)
Robert L. Crouch, Ph.D., University of Essex, Professor (*economic theory*)
Robert T. Deacon, Ph.D., University of Washington, Professor (*natural resource economics, public finance*)
Stephen J. DeCanio, Ph.D., Massachusetts Institute of Technology, Professor (*economic history, econometrics and statistics, applied microeconomics*)
Mark Feldman, Ph.D., UC Davis, Assistant Professor (*mathematical economics, economics of uncertainty*)
H. E. Frech, III, Ph.D., UC Los Angeles, Professor (*industrial organization, economic theory, health economics*)
Christian Gilles, Ph.D., University of Chicago, Assistant Professor (*finance, monetary theory*)
Gary D. Hansen, Ph.D., University of Minnesota, Assistant Professor (*macroeconomics*)
J. Fred Halterman, Ph.D., UC Berkeley, Professor Emeritus
M. Bruce Johnson, Ph.D., Northwestern University, Professor (*microeconomics, industrial organization*)
William F. Kennedy, Ph.D., University of Wisconsin, Professor Emeritus
Clement G. Krouse, Ph.D., UC Los Angeles, Professor (*industrial organization, capital theory*)
Stephen LeRoy, Ph.D., University of Pennsylvania, Professor (*macroeconomics, monetary economics, finance*)
John Marshall, Ph.D., Massachusetts Institute of Technology, Professor (*economic theory, economics of uncertainty*)
Walter J. Mead, Ph.D., University of Oregon, Professor (*natural resource economics, industrial organization*)
Rajnish Mehra, Ph.D., Carnegie-Mellon University, Associate Professor (*capital markets, finance*)
Lloyd J. Mercer, Ph.D., University of Washington, Professor (*economic history, water resource economics, microeconomic theory*)
W. Douglas Morgan, Ph.D., UC Berkeley, Professor (*public finance, applied microeconomics, macroeconomic theory, water resource economics*)
William R. Parke, Ph.D., Yale University, Assistant Professor (*econometrics, forecasting, macroeconomics*)
Maxwell C. Pellish, M.A., UC Santa Barbara, Lecturer Emeritus
Llad Phillips, Ph.D., Harvard University, Professor (*labor economics, econometrics, economics of criminal justice*)

John E. Pippenger, Ph.D., UC Los Angeles,
Professor (*international finance, monetary
theory, macroeconomics*)
Tatsuyoshi Saijo, Ph.D., University of
Minnesota, Assistant Professor
(*microeconomics*)
Jati K. Sengupta, Ph.D., Iowa State University,
Professor (*econometrics, operations
research, economic development*)
Perry Shapiro, Ph.D., UC Berkeley, Professor
(*microeconomic theory, public finance*)
Jon Sonstelie, Ph.D., Northwestern University,
Associate Professor (*urban economics,
public finance*)
Charles Stuart, Ph.D., Lunds Universitat,
Associate Professor (*law and economics,
public finance, economic theory*)
Harold L. Votey, Jr., Ph.D., UC Berkeley,
Professor (*economic development,
international trade, economics of criminal
justice*)

The undergraduate programs in economics, business economics, and economics/mathematics are designed to serve several objectives. Completed in combination with other courses in the College of Letters and Science, the majors provide the opportunity for general cultural and intellectual development. They are particularly useful as preparation for professions such as law, journalism, and accounting. The economics and economics/mathematics majors provide a solid foundation for graduate study in economics or administration, and the business economics major is a good basis for graduate work in administration and management.

Academic counseling is available for undergraduates from the undergraduate adviser and peer counselors, and for graduate students from the assistant for graduate affairs. *Undergraduate Study in Economics*, published annually for majors and prospective majors, addresses questions most frequently asked by economics majors. Brochures describing the M.A. and Ph.D. programs in economics, and the M.A. option in business economics, are also available.

After completing specific prerequisites, students with a bachelor's degree in business economics, economics, and economics/mathematics are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Economics

Before admission to the economics or business economics major, students must complete all preparation for the major courses with a grade-point average of 2.5 or higher; these courses may not be taken on a passed/not passed basis. Students may declare a pre-economics/business economics major after they have completed at least three courses required for the pre-major with at least a 2.5 GPA in all pre-major courses completed at that time. Students who declare the pre-major are responsible for satisfying degree requirements in effect at the time of their declaration. Pre-major status does not, however, guarantee admission to full major status. When preparation requirements are satisfied, students should complete a change of major petition available in the Economics Undergraduate Office.

Preparation for the major. Students must complete the following courses with a grade of C or higher: Mathematics 3A-B or appropriate portions of 3S, or Mathematics 7A-B; or Mathematics 3A and English 42 or 109B or 109C. In addition, the following lower-division courses are also required, with a grade-point average of 2.5 or

higher: Economics 1, 2, 3A and 3B or 3A and 3C, and 5 or upper-division equivalent. Upper-division students transferring to the major may take Economics 109 rather than 1 and 2. See the economics undergraduate adviser for further details.

Upper-division major. Thirty-six upper-division units in economics, including Economics 100A or 104A, 100B or 104B, and 101 or 105, are required. Students may choose the remaining 24 units from upper-division economics courses with at least three of the upper-division electives selected from the following list: Economics 102A-B, 103, 107, 111, 112A-B, 113A-B, 114, 115, 120, 122, 123, 125, 126, 130, 133, 135, 141A-B-C-D, 143, 147, 148, 149, 150, 160, 180, 181. The following restrictions apply to the major: Economics 109, 193, and 110 do not count toward upper-division requirements; credit is not allowed for both 100A and 104A, or both 100B and 104B, or both 101 and 105. A maximum of 12 units of Economics 199 will apply to the upper-division major.

Bachelor of Arts — Business Economics

Preparation for the major. Courses and preliminary grade-point average required as preparation for the major are the same as those for the economics major, listed above.

Upper-division major. Forty upper-division units in economics, including Economics 100A or 104A, 100B or 104B, 101 or 105 and 134A are required. At least four of the six upper-division electives must be selected from the following courses: Economics 106, 116, 117A-B, 119, 121, 124, 130, 131, 132, 134B, 135, 136A-B-C, 137, 138A-B-C, 139, 146, 172, 175, 176, 184. The following restrictions apply to the major: Economics 109, 193, and 110 do not count toward upper-division requirements; credit is not allowed for both 100A and 104A, or both 100B and 104B or both 101 and 105. A maximum of 12 units of Economics 199 will apply to the upper-division major.

Concentration in Accounting

Completion of the concentration is voluntary, and will be acknowledged by the Department of Economics, upon request. The completed concentration will not be formally acknowledged on the student's official transcript or diploma.

Preparation for the major. See the preparation for the major requirements above for the Business Economics major.

Upper-division major. Forty-eight upper-division units in economics, including the following required courses: Economics 100A or 104A, 100B or 104B, 101 or 105, 134A, 136A-B-C, 137, 172. In addition, three upper-division electives from the following list: Economics 132, 138A-B-C, 139, 186A-B, 195H.

Bachelor of Arts — Economics/ Mathematics

Preparation for the major. Before admission to the economics/mathematics major, students must complete all preparation for the major courses with a grade-point average of 2.5 or higher; these courses may not be taken on a passed/not passed basis. The following courses are required: Economics 1 and 2 or 109; Mathematics 3A-B and 3C or 3CE (or appropriate portions of 3S), or 7A-B-C; Mathematics 5A-B-C (or appropriate portions of 5S), or 11A-B-C; Mathematics 8. Upper-division students transferring to the major may substitute Economics 109 for Economics 1 and 2.

Upper-division major. Forty upper-division units in economics and mathematics, including the following courses, are required: Economics

104A-B, Economics 105, Mathematics 108A-B, and either Economics 141A-B-C or P/STAT 120A-B-C. A minimum of 16 units in each department is required. A maximum of 12 units of Economics 199 and/or Mathematics 199 will apply toward the major. Economics 109, 110, and 193, and Mathematics 100A-B, 192, 193, and P/STAT 133A-B-C do not count toward the upper-division requirement. Students should consult closely with their adviser in the Department of Economics or Mathematics to assure an appropriate program of study.

Senior Honors Program

The senior honors program provides a means for recognizing outstanding scholastic achievement. Students who have completed at least 105 quarter units, with a minimum grade-point average of 3.5, may apply for the program. Students who complete the senior honors project successfully will be eligible for Distinction in the Major status at graduation. For further information, contact the undergraduate adviser.

GRADUATE PROGRAM

Master of Arts — Economics

Admission

An undergraduate major in economics is not required for admission to the graduate program. However, the department does require that specific courses, particularly economic theory, be passed with distinction. At least two quarters of calculus are required, and one year is recommended. With department consent, students with inadequate preparation in economics or mathematics may be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses.

Graduate Record Examination scores are required of all M.A. applicants. Foreign applicants must take the Test of English as a Foreign Language (TOEFL) unless they have completed a bachelor's or master's degree in the U.S. or speak English as a native language.

Degree Requirements

The M.A. may be obtained under either of the two plans described below. There is no language requirement for the M.A. degree. Well-prepared students can obtain the M.A. in one year. Plan A is designed for students who wish specifically to acquire the M.A. degree; Plan B is designed for students in the Ph.D. program who wish to acquire the M.A. degree.

Plan A requires thirty-six units of course work, distributed as follows: 20 units — core courses (Economics 205A-B, 207, 208, and 247); 8 units — elective field courses; 8 units — electives. A comprehensive oral examination in economic theory, econometrics, and the elective field is also required.

Plan B requires thirty-six units of course work, as follows: Economics 201A, 210A-B-C, 241A-B-C, and 204A-B. A comprehensive oral examination in microeconomic theory and econometrics is required.

Master of Arts — Option in Business Economics

The business economics option is designed to prepare students for management and management specialist roles in business institutions as well as in government and government-related enterprises. The fields of industrial organization, economic and business forecasting, and finance are singled out for detailed treatment. The required course work in accounting forms the ground work for the CPA qualifying examination. The core program, described below, provides a

full complement of instruction to students with no prior training in business or economics.

Admission

Prerequisites to admission to the business economics option are two quarters (or one semester) of college-level calculus, an introductory course in accounting principles, intermediate-level courses in microeconomic and macroeconomic theory, and at least one basic statistics course. With the consent of the department, students with deficient backgrounds may be admitted. They will, however, be required to remedy any deficiencies by taking appropriate undergraduate classes. Graduate Record Examination scores are required of all M.A. applicants. Foreign applicants must take the Test of English as a Foreign Language (TOEFL) unless they have completed a bachelor's or master's degree in the U.S. or speak English as a native language.

Degree Requirements

The four elements of the M.A. business economics option are: (1) the *Core*, nine courses which concentrate on economic theory, econometrics, and accounting practice; (2) the *Fields*, seven courses which provide specialized knowledge of industrial organization, economic forecasting, business history, and finance; (3) the *Practicum*, a two-quarter seminar applying what has been learned in the core and the advanced fields to real business problems; and (4) the *Electives*, a minimum of four courses that offer the student an opportunity to pursue and develop areas of personal interest.

A grade-point average of 3.0 and satisfactory completion of practicum research papers are required for graduation.

Doctor of Philosophy — Economics

Admission

An undergraduate major in economics is not required, but the department does require that specific courses, particularly economic theory, be passed with distinction. At least one year of calculus is required; prospective students are advised to take as much mathematics as possible, particularly calculus and matrix algebra. Students with inadequate preparation may be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses.

Graduate Record Examination scores are required of all applicants. Foreign applicants must take the Test of English as a Foreign Language (TOEFL) unless they have completed a bachelor's or master's degree in the U.S. or speak English as a native language.

Degree Requirements

Advancement to candidacy depends on successful completion of written comprehensive examinations and an oral defense of the dissertation proposal. Ph.D. students normally take one year of course work to prepare for the microeconomic theory and quantitative exams. During the second year, students take field courses to meet the macroeconomic theory and elective field requirements. One course in capital theory and uncertainty is also required.

Within one year following successful completion of the written theory and quantitative exams, the student is expected to submit a written dissertation proposal and defend that proposal orally.

The student who enters the program well prepared and devotes full time to graduate study of economics can finish the Ph.D. course work and dissertation in three to five years. There is no language requirement for the degree.

ECONOMICS COURSES

LOWER DIVISION

1. Principles of Economics — Micro

(5) Crouch, Mead
Prerequisite: not open for credit to students who have completed Economics 109.
An introduction to microeconomic analysis. Economic theory related to demand, production, competitive and noncompetitive product markets, input markets, and welfare. Applications of microeconomic theory including its use in evaluating and forming public policy. (F,W,S)

2. Principles of Economics — Macro

(4) Crouch, Morgan
Prerequisite: Economics 1. Not open for credit to students who have completed Economics 109.
An introduction to macroeconomic analysis. Analysis of income, employment, and the price level. Applications of macroeconomic theory including its use in evaluating and forming public policy. (F,W,S)

3A-B. Accounting Principles — Financial

(4-4) Staff
Introduction to financial accounting principles, including the basic accounting model, income measurement and valuation issues, sources and uses of capital and financial reporting.

3C. Accounting Principles — Managerial

(4) Staff
Prerequisites: Economics 3A; Economics 3B recommended.
Introduction to managerial accounting principles, including the analysis of accounting data by managers in directing the affairs of business organizations which involves the analysis and study of concepts of planning, controlling, and decision making.

4. Microcomputer Decision Support Systems

(5) Staff
Prerequisites: Economics 3A-B-C.
Introduction to decision support system applications of the microcomputer. The class will include a financial planning language model, a spreadsheet model, and a relational database through lecture and in laboratory problem solving.

5. Statistics with Economic and Business Applications

(5) Bencivenga, Parke, Shapiro
Lecture, 3 hours; seminar, 2 hours; computer lab, 1 hour.
An introduction to the analysis of economic data, elementary statistical methods, and use of the computer. Topics will include basic probability theory, statistical inference and hypothesis testing, and regression. (F,W,S)

UPPER DIVISION

100A. Microeconomic Theory and Policy

(4) Staff
Prerequisites: Economics 1 and 2 or 109 and Economics 5. Credit not given for both Economics 100A and 104A. *Lecture, 3 hours; discussion, 1 hour.*
Economic theory relating to demand, production, and competitive product markets with emphasis on applications of theory. (F,W,S)

100B. Microeconomic Theory and Policy

(4) Staff
Prerequisite: Economics 100A. Credit not given for both Economics 100B and 104B. *Lecture, 3 hours; discussion, 1 hour.*
Economic theory relating to imperfectly competitive product markets, input markets, and welfare, with emphasis on applications of theory. Basic capital theory will be covered. (F,W,S)

101. Static Macroeconomics and Policy

(4) Staff
Prerequisite: Economics 100A. Economics 100B strongly recommended. Credit not given for both Economics 101 and 105. *Lecture, 3 hours; discussion, 1 hour.*
Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on applications of theory. (F,W,S)

102A. Advanced Topics in Microeconomics

(4) Sengupta
Prerequisite: Economics 100B or 104B.
Elements of linear programming, input-output analysis, and game theory.

102B. Dynamic Macroeconomics

(4) Staff
Prerequisite: Economics 101 or 105.
Analysis of dynamic macroeconomic systems, including economic fluctuations, growth, and stabilization.

103. History of Economic Thought

(4) Leroy
Prerequisites: Economics 1 and 2, or Economics 109.
Analysis of the development of economic theory from the middle ages to the late nineteenth century.

104A. Microeconomic Theory

(4) Staff
Prerequisites: Economics 1 and 2 or 109, plus Mathematics 3A and 3B; also Mathematics 3C or consent of instructor. Credit not given for both Economics 104A and 100A.
Economic theory relating to demand, production, and competitive product markets, using techniques from the calculus.

104B. Microeconomic Theory

(4) Staff
Prerequisite: Economics 104A. Credit not given for both Economics 104B and 100B.
Economic theory relating to imperfectly competitive product markets, input markets, and welfare, using techniques from the calculus. Basic capital theory will be covered.

105. Static Macroeconomics

(4) Staff
Prerequisites: Economics 1 and 2 or 109, plus Mathematics 3A and 3B; also Mathematics 3C or consent of instructor. Credit not given for both Economics 105 and 101.
Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on pure theory and use of techniques from the calculus.

106. Managerial Economics

(4) Staff
Prerequisites: Mathematics 3A-B or 7A-B, and Economics 100A-B or 104A-B.
Economic principles will be applied to practical decision-making situations. Methods of price and output determination, capital budgeting, and choices under uncertainty. Methods of economic analysis and their application will be emphasized.

107. Comparative Economic Systems

(4) Frech

Prerequisite: Economics 100B or 104B.

Centrally planned socialism, market socialism, capitalism, and anarchy will be compared. Information needs, prices as signals, the relation between property rights and decentralization, and Marxian value theory will be examined.

108. The Soviet Economy

(4) Staff

Prerequisites: Economics 100A-B or 104A-B.

This course will examine current output and multi-period plans, non-price signals, price determination, turnover tax, incentives, property rights, bargaining, agriculture, the role of money, the informal economy, and proposals for reform.

109. Introduction to Economics

(4) Staff

Prerequisites: not open to those who have taken Economics 1 or Economics 2. Students may enroll in Economics 109 only if they have upper-division standing. (Majors are advised to take Economics 1 and 2 for a more thorough background for the major.) Does not count as an upper-division major elective. Lecture, 3 hours; discussion, 1 hour.

Intensive study of economic principles. (F,W,S)

110. Contemporary Economic Problems

(4) Staff

Intended for non-majors. Does not count as upper-division major elective.

Current social-economic problems will be analyzed, each by a qualified staff member. Topics may include the following; the economics of poverty, discrimination, war, monopoly, the stock market, gold, inflation-deflation, economic growth and alternative economic systems.

112A. European Economic History to 1850

(4) Mercer

Prerequisites: Economics 1 and 2 or Economics 109.

Analysis of the economic development of Europe from the Middle Ages through the English Industrial Revolution.

112B. European Economic History Since 1850

(4) Mercer

Prerequisites: Economics 1 and 2 or Economics 109.

Analysis of the economic development of Europe since the English Industrial Revolution.

113A. Economic History of the United States to 1900

(4) Mercer, DeCanio

Prerequisites: Economics 1 and 2 or 109.

Key issues and episodes in American economic history, such as the sources of economic growth, slavery and the nineteenth-century southern economy, Populism and the rise of regulation, and macroeconomic history.

113B. Twentieth-Century United States Economic History

(4) Mercer

Prerequisites: Economics 1 and 2 or 109.

A survey of U.S. economic development in the twentieth century with emphasis on issues related to the growth, instability, and distribution of income. The impact of public policy on economic growth, instability, and income distribution will be an important theme of the course.

114. Economic Development

(4) Staff

Prerequisites: Economics 1 and 2 or 109.

Applications of economic theory to the problems of developing nations.

115. Environmental Economics

(4) Caswell, Staff

Prerequisite: Economics 1 or 109.

Economic analysis of environmental decision making. Determination of the optimum level of pollution. Examination of the concept of externalities, estimation of social versus private costs and benefits, common property resources, welfare theory, and production theory applied to problems of pollution.

116. Organization of Industry

(4) Mead, Krouse, Comanor

Prerequisite: Economics 100B or 104B.

Analysis of competition, monopolistic competition, oligopoly, and monopoly theories and practices.

117A. Law and Economics I

(4) Stuart, Johnson

Prerequisite: Economics 100B or 104B. Law and Economics II may be taken before, or after, or independently of Law and Economics I.

Application of economic analysis to the law. Includes analysis of the common law, the Constitution and the federal system, and legal processes. Allocation of property rights and external costs and benefits will be examined.

117B. Law and Economics II

(4) Stuart, Johnson

Prerequisite: Economics 100B or 104B. Law and Economics I may be taken before, or after, or independently of Law and Economics II.

Application of economic analysis to the law. Includes public regulation of the market, regulation of business organizations and financial markets both by common law (torts and contracts), by statute law, and/or regulatory law.

119. Modern United States Business History

(4) Mercer

Prerequisites: Economics 1 and 2 or 109.

A survey of the development and change of business organization in the United States since the Civil War in the context of the growth and development of the economy and changes in society. Particular attention is paid to the relationship between business and government.

120. Urban and Regional Economics

(4) Staff

Prerequisite: Economics 100B or 104B.

Economic analysis applied to current urban and regional problems.

121. Real Estate and Housing Markets: An Introduction

(4) Staff

Prerequisites: Economics 5; and Economics 100A-B or 104A-B.

Both the economic and financial aspects of real estate are analyzed. The subject is treated as an extension and application of microeconomic theory applied to the institutions of the real estate market. Students are expected to understand statistical analysis.

122. Natural Resource Economics

(4) Mead, Caswell

Prerequisite: Economics 100B or 104B.

Microeconomic theory and capital theory applied to problems of conservation and management of natural resources. Analysis of public policy with special emphasis upon energy resources and the energy crisis. Additional topics may include examination of water, fishery, and outdoor recreation resource management.

124. Business and Society

(4) Staff

Prerequisites: Economics 1 and 2, or 109.

This course will discuss economic, social and political affairs as perceived by management. Topics will include trends in politics, public opinion, intellectual and policy criticisms of capitalism, the nature of democratic capitalism, and the rights and responsibilities of multinational companies.

125. Water Resource Economics

(4) Mercer, Morgan

Prerequisite: Economics 100B or 104B.

Microeconomic and capital theory applied to the problems of management of water resources. An analysis of public policy issues in the management of water resources.

126. Introduction to Marxist Economics

(4) Staff

Prerequisites: Economics 1 and 2.

A survey of the development, methodology, and problems of Marxist economics.

128. Literature and Economics

(4) DeCanio

Prerequisite: Economics 1.

Issues in history, political economy and social theory as reflected in major works of literature. Content and readings will vary from quarter to quarter. Extensive writing by students will be required.

129. Public Choice

(4) Staff

Prerequisites: Economics 100A-B.

Public choice theory examines the relationships between markets and competitive political processes in a free society. This course will present a simplified treatment of the major theoretical political-economic models that have been developed in this area of social science.

130. Public Finance

(4) Deacon, Morgan, Staff

Prerequisites: Economics 100B or 104B and Economics 101 or 105.

Fiscal theory and policy. Incidence and effects of taxation, government expenditure programs, and benefit cost analysis.

132. Auditing

(4) Staff

Prerequisite: Economics 136A-B-C.

Fundamentals of the audit function including audit planning, internal control review, and communicating audit findings via the audit report. Audit procedures for substantive and compliance testing of balance sheet accounts valuation and income statement analytic review will be covered.

133. Inflation, Unemployment, and Business Cycles: Topics in Macroeconomic Policy

(4) Hansen

Prerequisites: Economics 100A-B and 101 or Economics 104A-B and 105.

Topics may include the Keynesian and Monetarist approaches to fiscal and monetary policy, the Phillips curve, rational expectations and the Lucas critique, equilibrium business cycle theory, rules versus discretion, time inconsistency of optimal policies, inflation and the government budget deficit.

134A. Financial Management

(4) Staff

Prerequisites: Economics 5 or equivalent, and Economics 100B or 104B. Not open to students with credit for Economics 134.

Discounting of certain future cash flows. Principles of evaluation of investment projects. Demand and supply of investment funds. Risk and the valuation of assets prices. Analysis of a

firm's debt and dividend policies; the effect of taxes and inflation on these policies.

134B. Financial Management

(4) Staff

Prerequisites: Economics 5 or equivalent; Economics 100B or 104B; Economics 134A.

This course is devoted to the testing and application of theories developed in Economics 134A. The specific characteristics and uses of warrants, options, futures, bonds, and stocks are studied. The microcomputer lab may be used for homework projects.

135. Monetary Economics

(4) Pippenger

Prerequisite: Economics 101 or 105.

Survey of monetary theory, the banking system and the supply of money, monetary policy, and current issues.

136A-B-C. Intermediate Accounting

(4-4-4) Staff

Prerequisites: Economics 3A-B-C.

Advanced applications of financial accounting concepts including the development of a more comprehensive knowledge of accounting principles and the theory supporting them.

137. Financial Planning and Control

(4) Staff

Prerequisite: Economics 3C and 4.

Advanced applications of managerial accounting concepts emphasizing the interaction between the accounting process and the concepts and techniques of the managerial process. This course includes a study of operations research techniques and price setting.

138A. Income Tax Accounting — Individuals

(4) Staff

Prerequisite: Economics 3A-B.

A comprehensive review of the federal income tax structure pertaining to individuals. The determination of gross income, gains or losses, capital gains, dividends, personal deductions yielding taxable income, tax computation, and withholding will be covered.

138B. Income Tax Accounting — Corporations

(4) Staff

Prerequisite: Economics 138A.

A comprehensive review of the federal income tax structure pertaining to corporations, shareholders, partnerships, and partners. The determination of income, deductions and rates, reorganizations, and personal holding companies will be covered.

138C. Income Tax Accounting — Advanced Topics

(4) Staff

Prerequisites: Economics 138A-B.

A comprehensive review of federal income taxation covering gifts, estates, trusts and beneficiaries, as well as income tax planning and the review of tax shelters.

139. Advanced Accounting

(4) Staff

Prerequisites: Economics 136A-B-C.

Accounting for business combinations and preparation of consolidated financial statements, partnership formation, operation and liquidation, troubled debt restructuring, foreign currency translation and transactions, and principles of fund accounting.

141A-B-C-D. Econometrics

(4-4-4-4) Staff

Prerequisites: for Economics 141A, Mathematics 3A-B-C or equivalent. For Economics 141B, Economics 141A. For

Economics 141C, Economics 141B. Credit not given for both Economics 141A-B and PSTAT 120A-B.

The application of quantitative methods in economics.

A: Will cover probability and its use in decision theory, distributions and their application to the distribution of income and firms, inference and hypothesis testing and their application in econometric estimation and model construction.(F)

B: Covers fundamental classical and Bayesian methods in statistical inference, including point estimation, confidence intervals, and hypothesis testing, with applications to problems in the social sciences.(W)

C: Discussion of specific problems which arise in the course of estimating economic models, such as the use of dummy variables, heteroscedasticity, multicollinearity, autocorrelation, and an introduction to simultaneous equation estimation. (S)

D: Will cover extensions of the general linear model, simultaneous equations estimation, identification, dynamic model structure, and limited dependent variable estimation. Emphasis is given to both theoretical development and applications of the basic theory.

143. Mathematical Economics

(4) Sengupta

Prerequisites: Economics 104B and 105.

Application of mathematics to selected topics in micro- and macroeconomic theory

147. Introduction to Econometrics

(4) Cooley, Bencivenga

Prerequisites: Economics 1, 2, and 5.

A course in the development of economic models, analysis of specific functional forms, and the application of forecasting and estimation techniques. Emphasis is placed on the student's use of the computer facility as an aid in applying these techniques for the study of social and economic problems.

150. Labor Economics

(4) Borjas

Prerequisite: Economics 100B or 104B.

This course analyzes the determinants of labor supply and labor demand, the decision to invest in schooling, on-the-job training, and other forms of human capital, and the impact of trade unions and racial and sexual discrimination in the labor market.

151. Economics of Discrimination

(4) Staff

Prerequisite: Economics 100B or 104B.

This course surveys both the theoretical models and the empirical evidence contained in the economic literature on employment discrimination. The origins of wage and employment differentials by race, ethnicity, and gender will be analyzed.

160. Economics of Crime and Justice

(4) Phillips, Votey

Prerequisites: Economics 1 and 2 or 109.

Examines social policy to minimize the losses to crime and the costs of crime control. Develops the economics of crime generation, law enforcement, prosecution, corrections, and punishment.

171. Accounting Internship

(1-4) Staff

Prerequisites: Economics 136A-B and 3.0 or better accounting grade-point average. Units do not apply toward the major. Maximum of four units can be earned. Offered P/NP only.

This course provides students the opportunity to gain practical experience in an accounting environment.

172. Accounting Information Systems

(4) Staff

Prerequisites: Economics 136A-B-C and 137.

The analysis, design, and implementation of system studies into an accounting information systems environment through the use of case studies and computer accounting systems.

175. Regulation of Economic Activity

(4) Staff

Prerequisites: Economics 100A-B

Analysis of alternative public policies for maintaining competitive performance in the economy.

176. Comparative Management Systems

(4) Staff

Prerequisites: Economics 100A and 100B.

A systematic comparison and in-depth analysis of alternative management systems. Cultural, social, and economic factors will be considered.

180. International Trade

(4) Votey

Prerequisite: Economics 100B or 104B.

Historical and contemporary trade mechanisms; international trade theory; trade and welfare.

181. International Finance

(4) Pippenger

Prerequisite: Economics 101 or 105.

International money and capital markets and their impact on the domestic and world economies; international financial institutions and policies.

184. Management and Organizational Behavior

(4) Alexander

Prerequisite: senior standing.

Structure and design of organizations, organizational behavior, management and organizational performance.

186A-B. Business Law for Accountants

(4-4) Staff

Prerequisites: Economics 3A-B-C for 186A;

Economics 186A for 186B.

Designed to provide the accounting student with a knowledge of contract law, and the concepts of consideration, bailments, agency relationships, applications of the Uniform Commercial Code, and the law of corporations, partnerships, real and personal property, antitrust and securities regulations.

190. Selected Studies in Foreign Economies

(4) Staff

Prerequisites: upper-division standing and consent of instructor. May be repeated to a maximum of 12 units provided subject content is different.

An analysis of the economy of a particular country.

192. Field Research in Economics

(4-12) Staff

Prerequisites: upper-division status, 3.0 overall grade-point average, approval of project by faculty sponsor and department undergraduate committee. No more than four units of Economics 192 may be counted toward the requirements for the major in economics, business economics, or economics/mathematics.

Directed field research on a topic in economics.

193. Internship in Economics

(1-4) Staff

Prerequisites: upper-division standing; 2.5 overall grade-point average; approval by department. Units do not apply toward the major. Not to be used for accounting

internships. Maximum of four units can be earned. Offered P/NP only.

Opportunities to learn practical approaches to economic issues by working under faculty direction as interns in the community. Class sessions, periodic and final reports will be part of the internship.

194. Group Studies

(1-4) Staff

Prerequisites: upper-division standing and admission by special arrangement. Subject to departmental approval, students may repeat this course; however, only four units may count toward the major.

Intensive study and research on a topic in economics selected by the student with the guidance and approval of a faculty member.

195H. Senior Honors Seminar — Accounting

(4) Staff

Prerequisite: consent of instructor. May be repeated once for credit.

Seminar format for accounting students to discuss advanced accounting theory and concepts. FASB pronouncements selectively reviewed for their conceptual background; students will research current agenda items before the FASB. Guest speakers from various accounting professions will supplement the lectures.

196H. Senior Honors Seminar

(4) Staff

Prerequisite: admission to Department of Economics senior honors program. May be repeated once for credit.

Advanced topics in economic theory and policy. Weekly seminar discussions led by various members of the economics faculty.

199. Independent Studies in Economics

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in economics. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Only 12 units of Economics 199 may apply toward the major requirements. Admission by special arrangement.

Coursework shall consist of academic research. This course is not intended for internship credit.

GRADUATE COURSES

201A. Optimization and Comparative Statics

(4) Sonstele

Prerequisites: a knowledge of differential calculus, Economics 242, Economics 100A-B or 104A-B or equivalent courses.

The mathematics of optimization with equality constraints and of comparative statics and the application of those techniques to economic theory, including topics in consumer theory, production theory, and market equilibrium. Introduction to optimization with inequality constraints, including the Kuhn-Tucker theorem and linear programming.

201B. Dynamic Optimization in Economic Analysis

(4) Staff

This course covers basic tools of dynamic optimization used in economics. Topics which may be covered include difference and differential equations, calculus of variations, dynamic programming, the linear optimal regulator problem, and Kulman filtering.

202. Advanced Topics in Economic Theory

(1-4) Krouse

May be repeated for credit.

Reading and discussion of selected topics and recent literature in current economic theory. Specific material will vary from quarter to quarter.

203A. History of Economic Thought

(4) LeRoy

Analysis of the development of economic theory from the middle ages to the late nineteenth century.

203B. History of Economic Thought

(4) Staff

Prerequisite: Economics 203A or consent of instructor.

Analysis of the relationships between social conditions, economic theory, and economic policy from the neoclassical period to the present. Methodological problems including relationships to the sociology of knowledge and general intellectual history.

204A. Macroeconomic Theory

(4) Cooley

Prerequisites: Economics 201A and 210A.

A brief history of macroeconomic thought through Keynes. Primitive and modern theories of consumption, investment, the demand for money and labor supply. Discussion of contracting theory and recent fixed price theories of the business cycle.

204B. Macroeconomic Theory

(4) Cooley

Prerequisite: Economics 204A.

Introduction to equilibrium business cycle theory. Discussion of the meaning of equilibrium and rational expectations. Study of the rational expectations models of Lucas, Sargent, Wallace, and Barro. Also, an introduction to growth theory.

205A-B. Economic Decisions

(4-4) Comanor

Prerequisites: knowledge of differential calculus and economic theory. Economics 100A-B, Economics 101, or equivalent courses.

The course will establish the ideas and techniques of optimally allocating scarce resources. The student will learn the nature of objective functions and constraints in theory and through examples describing rational economic behavior of individuals, firms, and public bodies. Basic capital theory will be covered.

206. Operations Research

(4) Sengupta

Prerequisite: Economics 205A, Economics 205B, or consent of instructor.

Topics in applied methods of operations research selected from stochastic programming, statistical decision theory, inventory control, and queuing

207. Probability and Statistics

(4) Parke

Prerequisite: Economics 5 or equivalent.

An introduction to probability theory and to the elements of statistical methodology useful in economic applications. The primary objective is to provide the foundation necessary for Economics 247. Campus computer facilities will be used for empirical statistical analysis.

208. Topics in Macroeconomic Theory and Policy

(4) Crouch

Classical, Keynesian, and post-Keynesian theory of income and employment, and policy prescriptions thereof. Conventional theories of inflation. Introductory survey of disequilibrium theory, with emphasis on fixed price models, income

constrained processes, the search theory of resource unemployment, and rational expectations formation.

209. Introduction to Operations Management

(4) Staff

Prerequisite: Mathematics 3B or equivalent.

Students who have received credit for Economics 205C will not receive credit for this course.

Linear and non-linear programming, queuing theory, inventory theory, and other topics in operations research with applications to business and economics.

210A. Microeconomic Theory

(4) Staff

Prerequisites: a knowledge of differential calculus, Economics 242, Economics 100A-B or 104A-B or equivalent courses.

Introduction to microeconomics, methodology, and behavioral assumptions, exchange and markets, value of time and household production, imperfectly competitive markets.

210B. The Theory of Price Taking Agents

(4) Shapiro

Prerequisites: a knowledge of differential calculus, Economics 242, Economics 100A-B or 104A-B or equivalent courses.

Course will stress the relationship between assumptions about technology and tastes and the market behavior implied by the assumptions. Formal neoclassical models of the firm will be used to generate predictions about factor demands and product supply.

210C. General Equilibrium and Welfare

(4) Feldman

Prerequisites: a knowledge of differential calculus. Economics 242, Economics 100A-B or 104A-B or equivalent courses.

Rigorous derivation of existence of Walrasian equilibrium and the fundamental theorems of welfare economics. Other topics will include core theory, rational expectations, stability, public goods, externalities, and social choice.

210D. Capital Theory and Uncertainty

(4) Frech

Prerequisite: Economics 201A (formerly 200B).

Course offers various current and historical topics in the context of models of general equilibrium, including capital theory and the economics of uncertainty.

211A-B. The Economic Foundations of Human Behavior

(4-4) Crouch

Theoretical analysis of human capital accumulation, the allocation of time, household production, and the family as a decision-making unit with respect to non-market behavior. Application of the preceding to such topics as fertility, marriage, criminality, health, education, discrimination.

212. Economic History of Europe

(4) Mercer

Issues in European economic history.

213. American Economic History

(4) DeCanio

Issues in American economic history.

214A-B. Economic Development

(4-4) Bencivenga, Votey

A study of the special problems faced by the less developed countries and the initial conditions and economic mechanisms that must be taken into account in raising living standards. Topics considered include population growth, labor supply, capital accumulation, the use of

foreign resources, and effects of technological change.

216A-B-C. Organization of Industry

(4-4-4) Comanor, Frech, Krouse

Prerequisite: for Economics 216C, Economics 216A-B or consent of instructor.

A-B: Theoretical and empirical analyses of "imperfect" competition. Individual or firm optimization and market equilibrium are considered. Topics include oligopoly, monopolistic competition, information, determinants of market structure, complex pricing, vertical relations. Antitrust, regulatory, and government ownership policies will be examined.

C: Reading and discussion of selected topics. Students, outside speakers, and faculty will present recent and on-going research and commentaries on recent court and regulatory decisions and the newer legal and economic literature in the field of industrial organization.

220A-B. Urban and Regional Economics

(4-4) Shapiro

A: The theory of city and regional economics. Economics theory when distance is taken as an important determinant of economic activity.

B: Urban and regional policy. The application of theory to policy decisions.

230A-B. Public Finance

(4-4) Deacon, Stuart, Sonstelie

A: Public goods, taxation, and expenditure theory.

B: Topics vary: public debt management and fiscal policy; advanced topics in public expenditure and taxation theory; analysis of collective choice, political processes, and group decision making.

234A. Introduction to Finance

(4) Staff

Basic principle of financial management and an introduction to the subjects covered in subsequent courses in the Economics 234 sequence. Topics include financial planning, investment criteria, capital structure, and principles of asset valuation.

234B. Theory of Finance

(4) Staff

Rigorous treatment of asset pricing theory. The economics of intertemporal choice and choice under uncertainty are developed and applied to financial markets. Theories of asset pricing are covered including the capital asset pricing model, arbitrage pricing theory, and option pricing theory.

234C. Corporate Finance

(4) Staff

Application of the theory of finance to the major issues in corporate finance. Topics include the cost of capital, dividend policy, long-term capital structure, cash budgeting, capital budgeting, lease-buy analysis, valuation and merger analysis.

234D. Investments

(4) Staff

Applications of the theory of finance to securities investment. Topics include security analysis, portfolio theory, futures markets, options trading, and the evaluation of mutual funds.

234E. Money and Capital Markets

(4) Staff

Monetary theory and the effects of monetary policy on capital markets. Topics include monetary institutions, the supply and demand of money, inflation, business cycles, and the term structure of interest rates.

235A. Money and Finance

(4) Mehra

Prerequisite: Economics 204A or 208.

Covers theoretical and empirical work on the efficiency of capital markets. Analyses investment and portfolio decisions for individuals and firms.

235B. Money and Finance

(4) LeRoy

Prerequisites: Economics 210D; Economics 204A or 208; Economics 235A.

Covers the integration of dynamic capital theory and the theory of finance, multiperiod general equilibrium pricing models and tests of those models.

235C. Money and Finance

(4) Pippenger

Prerequisites: Economics 235A-B.

Examines the theoretical bases for and empirical evidence about the demand for and supply of money. Also covers monetary policy and the term structure of interest rates.

241A-B-C-D. Econometrics

(4-4-4-4) Cooley, DeCanio, Parke

Prerequisites: Mathematics 3A-B-C or equivalent. Economics 241A is prerequisite to Economics 241B, Economics 241B is prerequisite to Economics 241C, and Economics 241C is prerequisite to Economics 241D.

A: The application of quantitative methods in economics. Probability and its use in decision theory; distributions and their application to the distribution of income and firms; inference and hypothesis testing and their application in econometric estimation; and model construction.

B: Covers fundamental classical and Bayesian methods in statistical inference, including point estimation, confidence intervals, and hypothesis testing, with applications to problems in the social sciences.

C: Specific problems arising in the course of estimating economic models, such as, the use of dummy variables, heteroscedasticity, multicollinearity — autocorrelation, and an introduction to simultaneous equation estimation.

D: Covers extensions of the general linear model, simultaneous equations estimation, identification, dynamic model structure, and limited dependent variable estimation. Emphasis is given to both theoretical development and applications of the basic theory.

242. Mathematics for Economists

(4) LeRoy

Selected topics in mathematics of particular importance to economists including the calculus, difference, and differential equations, and linear algebra.

244A-B. Mathematical Economics

(4-4) Feldman, Sengupta

Prerequisites: Economics 200A-B-C-D-E; Mathematics 118A or consent of instructor. Mathematical analysis of economic theory.

245A. Econometrics

(4) Parke, Phillips

Prerequisites: Economics 241A-B-C-D.

Development of the theory of single equation and simultaneous equations estimation.

245B. Econometrics

(4) Phillips

Prerequisites: Economics 241A-B-C-D.

Econometric studies, spectral analysis, multivariate techniques.

246. Business Forecasting

(4) Parke

Prerequisite: Economics 147/247 or Economics 141C/241C.

Various methods for econometric forecasting, including statistical decision theory, Box-Jenkins, adaptive models, single and simultaneous structural equation models, and input-output analysis. Applications of various techniques to the forecasting needs of management, such as sales and inventory, will be discussed

247. Introduction to Econometrics

(4) Bencivenga, Cooley, Parke

Prerequisites: Economics 1 and 2 and Economics 5 or equivalent.

Practical course in development of economic models, analysis of specific functional forms, application of forecasting and estimation techniques. Emphasis on use of computer facility as aid in applying these techniques.

248. Applied Econometrics

(4) Cooley, Parke

Prerequisite: Economics 147/247 or Economics 141C/241C.

For students familiar with basic regression theory this course examines particular econometric models and some advanced econometric techniques. Typical topics include consumption, production, and investment functions, income determination models, and simultaneous equations macroeconomic forecasting models.

249. Data Management and Statistical Software

(4) Staff

Prerequisite: Economics 147/247 or Economics 141C/241C.

Database management and application of statistical methods stressing basic programming concepts, algorithms, data structure, database creation, management, and control. SAS (Statistical Analysis System) employed as primary language for data manipulation, programming, and econometric analysis. Direct use of campus computer facilities.

250A-B-C. Labor Economics

(4-4-4) Phillips, Borjas

A. Theory and estimation of input demand; econometrics of demand systems; household production models.

B. Labor market equilibrium; implicit contracts theory; information and uncertainty in labor market; union behavior.

C. Theory and estimation of labor supply models; human capital and income distribution; labor mobility; economics of discrimination.

260A. Natural Resources

(4) Deacon

Capital theory and welfare economics applied to natural resource industries; the role of renewable and nonrenewable resources in the process of economic growth; analysis of externalities and common property resources; public investment criteria.

260B. Natural Resources

(4) Mead

Capital theory, welfare economics, and benefit cost analysis at theoretical and applied levels, as they relate to energy resource management and public policy.

270A-B. The Management of Organizations

(4-4) Alexander

Managerial functions in the context of organization theory. The course studies the structure and design of organizations and major determinants of their performance including such behavioral factors as motivation, leadership, and group

characteristics, and such managerial processes as planning, controlling, and communicating.

273A-B-C. Managerial Accounting

(4-4-4) Staff

A: A course concerned with financial statements that are made available to creditors, stockholders, and other interested parties. The goal is to engender a knowledge of the measurement methods used by accountants and the ability to evaluate these methods.

B: The use of accounting as an instrument of financial planning and control. The goal is to build up an appreciation of the importance of planning and control within a business organization and an understanding of the methods and procedures used in practice and of the problems encountered in their use.

C: A course building on Economics 273A designed to assist the external user of financial statements to best use these data in the decision making process. To that end, the process of adjusting the statements to improve the measurements and the tools available to analyze the statements are used.

280A-B. International Trade

(4-4) Marshall, Pippenger

Prerequisite: Economics 204A for Economics 280B.

A: International trade theory.

B: International finance.

291. Graduate Workshop in Economics

(4) DeCanio, Frech

Presentation of research completed and in progress by graduate students, with faculty attending. Students expected to offer critical and useful comments on research. Open to Ph.D. and M.A. students. Largely, but not limited to, dissertation research.

292. Field Research in Economics

(1-12) Staff

Directed field research on a topic in economics.

297. Seminar on the Teaching of Economics.

(2) Morgan

Prerequisite: graduate standing.

Seminar and laboratory work covering the planning, presenting, and evaluating of instruction.

590A-B. Business Economics Practicum.

(4-4) Staff

A seminar in which students apply the analytical skills acquired in preceding coursework in the M.A.B.E. program to real business issues.

592. Teaching in Economics

(4-5) Staff

No unit credit allowed toward advanced degree.

Teaching assistant: leads discussion of topics covered in faculty lecture. Associate: assumes full responsibility for the teaching of one or more courses.

593. Research in Economics

(4) Staff

No unit credit allowed toward advanced degree.

Research under the direction of a faculty member.

594AA-ZZ. Special Topics in Economics

(1-4) Staff

Prerequisites: graduate standing and consent of instructor.

Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies in Economics

(4) Staff

Prerequisites: graduate standing and consent of instructor.

Critical review of research in selected fields.

596AA-ZZ. Directed Reading and Research

(2-4) Staff

Prerequisites: graduate standing and consent of instructor.

Individual tutorial.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff

Prerequisites: graduate standing and consent of instructor. No unit credit allowed toward advanced degree.

Instructor should be the student's major professor or chair of the doctoral committee.

598AA-ZZ. Master's Thesis Research and Preparation

(1-12) Staff

Prerequisites: graduate standing and consent of instructor. No unit credit allowed toward advanced degree.

Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

599AA-ZZ. Dissertation Research and Preparation

(1-12) Staff

Prerequisites: graduate standing and consent of instructor.

Only for research underlying the dissertation, writing the dissertation. Instructor should be the chair of the student's doctoral committee.

English

**Department of English, South Hall 2607;
Telephone (805) 961-3441. Department Chair:
Mark Rose.**

Faculty

H. Porter Abbott, Ph.D., University of Toronto,
Professor (*the novel, autobiography*)

Steven Allaback, Ph.D., University of
Washington, Professor (*fiction, American
literature, fiction writing*)

Sheridan Blau, Ph.D., Brandeis University,
Senior Lecturer with Security of
Employment (*English education, 17th-
century literature*)

Lee Bliss, Ph.D., UC Berkeley, Associate
Professor (*renaissance literature, drama*)

Edgar Bowers, Ph.D., Stanford University,
Professor (*English and American poetry*)

Zelda Bronstein, Ph.D., UC Santa Cruz,
Assistant Professor (*American literature*)

Elliott Butler-Evans, M.A., University of
Chicago; Ph.D., UC Santa Cruz; Lecturer
with Security of Employment (*Marxist
literary theory, feminist theory, semiotics,
modern fiction, Afro-American literature,
advanced expository writing*)

Julie Carlson, Ph.D., University of Chicago,
Assistant Professor (*English romantic
literature*)

John Carroll, Ph.D., Harvard University,
Professor (*18th-century English literature,
modern novel*)

Robert A. Erickson, Ph.D., Yale University,
Professor (*17th-and 18th-century English
literature*)

Michael A. Fernandez, M.A., California State
University, San Francisco, Lecturer with
Security of Employment (*writing — fiction/
nonfiction*)

Mark Ferrer, M.A., UC Santa Barbara, Director,
Program of Intensive English (*composition,
computer-based writing*)

Joseph Foladare, Ph.D., Yale University,
Professor Emeritus

William Frost, Ph.D., Yale University, Professor
Emeritus

Frank C. Gardiner, Ph.D., University of Oregon,
Associate Professor (*English literature,
medieval studies*)

Giles Gunn, Ph.D., University of Chicago,
Professor (*American literature and critical
theory*)

Donald Guss, Ph.D., University of Wisconsin,
Professor (*English literature 1500-1660,
Italian Petrarchism, renaissance literary
history*)

Eloise Hay, Ph.D., Harvard University,
Professor (*modern English and American
literature*)

Richard Helgerson, Ph.D., Johns Hopkins
University, Professor (*literature and culture
of the English renaissance*)

Paul Z. Hernadi, Ph.D., University of Vienna
and Ph.D., Yale University, Professor
(*literary theory, history of criticism,
comparative literature, modern drama*)

Edward Loomis, Ph.D., Stanford University,
Professor Emeritus

William S. Marks III, Ph.D., Stanford University,
Associate Professor (*19th-century
American fiction, modern British and
continental fiction*)

J. Chesley Mathews, Ph.D., UC Berkeley,
Professor Emeritus

Patrick J. McCarthy, Ph.D., Columbia
University, Professor (*19th-century English
literature, the novel*)

Frank McConnell, Ph.D., Yale University,
Professor (*American literature, British
romanticism, film, popular culture, literary
theory*)

Vivian Mercier, Ph.D., Trinity College, Dublin,
Professor Emeritus

Stephen Miko, Ph.D., Yale University, Associate
Professor (*modern novel*)

Michael O'Connell, Ph.D., Yale University,
Professor (*renaissance poetry and drama*)

Carol Pasternack, Ph.D., UC Los Angeles,
Assistant Professor (*medieval studies*)

Donald Pearce, Ph.D., University of Michigan,
Professor Emeritus

Anne Pidgeon, M.A., University of Michigan,
Lecturer with Security of Employment
(*freshman English*)

John Ridland, Ph.D., Claremont Graduate
School, Professor (*writing, poetry, teaching
of writing and poetry*)

Mark Rose, Ph.D., Harvard University,
Professor (*Shakespeare, Spenser, English
renaissance*)

Logan Speirs, M.A., Cambridge University,
Associate Professor (*English and
comparative literature*)

T.R. Steiner, Ph.D., Columbia University,
Associate Professor (*18th-century
literature, criticism, and theory; detective
fiction*)

Alan Stephens, Ph.D., University of Missouri,
Professor (*poetry, modern English and
American literature*)

Garrett Stewart, Ph.D., Yale University,
Professor (*19th-century English literature*)

Garth St. Omer, M.F.A., Columbia University,
Ph.D., Princeton University, Professor
(*modern fiction and creative writing*)

Douwe Stuurman, B. Litt., Oxford University,
Professor Emeritus

Homer Swander, Ph.D., University of Michigan,
Professor (*Shakespeare, modern drama*)

Lawrence Willson, Ph.D., Yale University,
Professor Emeritus
Everett Zimmerman, Ph.D., Temple University,
Professor (*18th-century satire, the novel*)
Muriel Zimmerman, Ph.D., Temple University,
Director, Interdisciplinary Writing Program
(*scientific and technical writing in the
academic disciplines*)

The Department of English performs several related functions: (1) it offers all undergraduates the opportunity to develop their skills in writing and in the critical reading of a variety of literary texts; (2) it makes available to all students a wide range of courses that may be taken for elective credit; (3) it provides a coherent and comprehensive program of literary studies leading to the Bachelor of Arts degree; (4) it offers graduate programs leading to the M.A. and Ph.D. degrees; and (5) it collaborates with other departments in the following major programs: comparative literature, film studies, medieval studies, renaissance studies, and environmental studies in the College of Letters and Science, and the literature program in the College of Creative Studies.

English majors are urged to consult the departmental undergraduate adviser for assistance in preparing programs of study. Students may also consult faculty advisers about academic and career aspects of their studies. Transfer students and nonmajors seeking information may direct their inquiries to the undergraduate adviser.

Some students majoring in English prepare for teaching careers in English and related fields. Most, however, enter other occupations and professions that call upon skills in verbal analysis and communication. The major is appropriate preparation for such fields as law, business, library science, public administration, journalism, publishing, and advertising. Majors are encouraged to consult the undergraduate adviser as well as the university career and placement offices about career opportunities.

Affiliated Programs. Four programs are directed by department members: the Alliance for Creative Theatre, Education, and Research (AC-TER); the South Coast Writing Project (SCWriP), which is affiliated with the Graduate School of Education; the Literature Institute for Teachers (LIT); and the Interpretive Studies Colloquia, an interdepartmental project designed to explore cross-disciplinary aspects of interpretive theory and practice. *ACTER* initiates and supports a wide range of scholarly and pedagogical programs to explore and develop the relationship between literature and theatre. It works closely with other major universities, with such institutions as the Folger Shakespeare Library, and with such theatres as the Royal Shakespeare Company and the Mark Taper Forum. *SCWriP* is a staff development program designed to improve the teaching of composition in all disciplines and grades, from elementary school through college. It conducts the Summer Institute in Composition at UCSB and year-round workshops on campus and at neighboring schools and colleges. *SCWriP* is an affiliate of the Bay Area Writing Project, the California Writing Project, and the National Writing Project. *The Literature Institute for Teachers* is an NEH-sponsored project designed to improve the teaching of literature at all grades from elementary school through the university. Conducted as an advanced program of *SCWriP*, it provides summer institutes and academic-year professional development programs for teachers. *The Interpretive Studies Colloquia* arranges three two-day conferences per academic year, each devoted to a selected topic of cross-disciplinary interest, as well as a number of group discussions exploring

new directions in interpretive theory and practice. Both faculty and graduate students of various disciplines are invited to participate in the events organized by ISC.

Creative Writing Program. The Department of English offers a series of courses in creative writing open to students from all majors. Two introductory courses — English 41 and English 101 — are open to all who register and may be repeated for credit. More advanced courses in the writing of fiction (English 103) and verse (English 104), and a seminar (English 105), may be taken with the consent of the instructor; independent studies in creative writing are occasionally arranged.

Interdisciplinary Writing Program. The Interdisciplinary Writing Program offers a variety of upper-division, specialized writing classes in the English 109 and English 110 series. The English 109 classes are independent, four-unit classes in areas such as scientific, technical, legal, and social science writing. The English 110 classes are two-unit writing adjuncts linked to upper-division classes in many academic disciplines. Consult the department *Course Outline Booklet*, available well in advance of each quarter, for a complete list of current offerings.

Teaching Credentials. The Department of English, in cooperation with the Graduate School of Education, offers a three-quarter program of graduate studies leading to a Single Subject Teaching Credential in English. The credential year includes a writing program coordinated by the staff and teacher/consultants of SCWriP. Students who wish to earn an M.A. in English in conjunction with the Single Subject Teaching Credential in English may apply to both programs concurrently. Students who wish to pursue a teaching career should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts — English

Preparation for the major. Required, with an average grade of C or higher: English 2A-B, 20, 30, 40; one course from Classics 36, 37, 38, 102, Comparative Literature 30A, Dramatic Art 160A, and History 4A-B-C. Upper-division majors may satisfy the history requirement by substituting one of the following sequences: History 111A-B, 113A-B, 115-116, 140A-B, 141A-B. History 140A-B and/or 141A-B are strongly recommended for all English majors.

Foreign language requirement. Students must complete either Option 1 or Option 2 below. Election to Phi Beta Kappa requires Option 1. Students who contemplate graduate study should consult their prospective graduate schools to determine if specific languages are required.

Option 1: Complete the sixth course or its equivalent in French, German, Italian, Russian, or Spanish, or the fifth quarter in Greek or Latin. Any student whose plan or program calls for some language other than those stipulated may substitute that language by petition.

Option 2: Complete five literature-in-translation courses, of which at least three must be upper-division. Film courses do not fulfill this option. Students who elect Option 2 must do so by petition and must consult the departmental undergraduate adviser.

Upper-division major. Forty upper-division units in English are required, including 20 units in the following courses: English 117A or 117B, 136, 152A, 162, 197. The remaining 20 units of

electives must be chosen from upper-division courses in English, with a maximum of four units of English 196. English 102A-B-C, 106, 106WP, 108T, 109A-B-C-D, 110AA-ZZ, and 117E will not apply to this requirement.

Honors Program

The Honors Program in English provides the opportunity for qualified majors to pursue advanced literary research and writing. To qualify for the program, students must maintain a grade-point average of 3.5 (overall and/or in the major) and have completed at least two quarters of the junior year at UCSB. After consulting with their department advisers, they may then apply to a professor of their choice with whom they will work for two quarters of their senior year on the writing of a thesis (or equivalent in creative composition), successful completion of which will merit the award of Distinction in the Major at graduation.

Students are also encouraged to apply for admission to the College of Letters and Science Honors Program as early as possible in their college work.

Further information about the Honors Program is available from the department's Honors Program adviser and from the undergraduate adviser.

GRADUATE PROGRAM

Master of Arts — English

Admission

The department welcomes applications to its M.A. program from those who wish to advance their knowledge of English and American literature for personal or professional reasons as well as from those who plan to continue to the Ph.D. Students may apply concurrently to the Single Subject Credential Program. Candidates for the graduate program must present (1) Aptitude and Advanced Scores in English literature obtained on the Graduate Record Examination, and (2) a paper written in an upper-division English literature course.

Degree Requirements

Requirements for the M.A. include the successful completion of (1) 36 units of graduate course work; (2) an examination in one foreign language; (3) a written comprehensive examination. All students must plan their programs in consultation with the graduate adviser; programs may not be filed without the adviser's approval. Additional details about the M.A. program may be found in the English Department's graduate handbook or in UCSB's *Graduate Division Announcement*.

Doctor of Philosophy — English

Admission

Students entering the Ph.D. program must complete the M.A. examination at a level of distinction high enough to qualify for further study. Candidates who enter with M.A. degrees from other institutions must pass the UCSB M.A. examination no later than the third quarter of their first year of residence.

Degree Requirements

Requirements for the Ph.D. include (1) 24 units of graduate course work beyond the M.A.; (2) fulfillment of language option A (two languages at the level of basic competency, with one of the two pursued to an advanced level), or B (one language at the level of special competency); (3) a second qualifying examination covering three

areas of concentration, one of which is the intended dissertation field; and (4) the dissertation. Full details of the Ph.D. program and requirements are provided in the English Department's graduate handbook or in UCSB *Graduate Division Announcement*.

ENGLISH COURSES

Detailed descriptions of English courses for the next quarter may be found in the *Course Outline Booklet* available in the department office prior to registration.

English 1, 2A-B, or equivalents are prerequisites to all other English courses.

LOWER DIVISION

1. Introduction to College Composition (4)

Required of students who have not satisfied the Subject A requirement. Completion with a grade of C or better satisfies the Subject A requirement and yields two units baccalaureate credit.

An introduction to the range of reading, critical thinking, and writing tasks required of members of the university community. Students write 6500 words in a variety of discourse types. Emphasis is on the writing of expository essays based on readings.

2A-B. First-Year Reading and Composition (4-4)

Prerequisite: satisfaction of English 1 required. English 2A is a prerequisite to 2B.

A: will be devoted to nonfictional prose and prose fiction, with heavy emphasis on expository writing.

B: will be devoted to poetry and drama and continued emphasis on expository writing.

4FS. Freshman Seminar (2-4)

Prerequisites: English 1, 2A-B, or equivalents. Freshman standing.

A seminar for freshman students with a strong interest in literature. See departmental *Course Outline Booklet* for topics.

10. Introduction to the Study of Poetry (4)

Prerequisites: English 1, 2A-B, or equivalents. An introduction to the critical reading of poetry. Continuing emphasis will be placed on developing writing skills in English 10, 20, 30, and 40.

20. The Literature of the English Renaissance (4)

Prerequisites: English 1, 2A-B, or equivalents. English 20 should normally be taken before English 30 and 40.

An introduction to the literature primarily of the English Renaissance stressing such authors as Chaucer, Marlowe, Jonson, Spenser, Webster, Donne, and Marvell. Continuing emphasis on developing skill in writing.

30. English Literature of the Restoration and Eighteenth Century (4)

Prerequisites: English 1, 2A-B, or equivalents. English 30 should normally follow English 20 and precede English 40.

An introduction to the literature from 1660 to 1800 stressing such authors as Milton, Dryden, Pope, Johnson, Fielding and Swift. Continuing emphasis on developing skill in writing.

40. English Literature of the Nineteenth Century (4)

Prerequisites: English 1, 2A-B, or equivalents. English 40 should normally be taken after English 20 and 30.

An introduction to the English literature of the period 1800-1900, stressing such authors as Wordsworth, Coleridge, Shelly, Keats, Arnold, Tennyson, Browning, and Yeats. Continuing emphasis on developing skill in writing.

41. Creative Writing (4)

Prerequisites: English 1, 2A-B, or equivalents. May be repeated for credit up to eight units.

Writing in such forms as the short story, poetry, and fiction.

42. Practice in Writing (4)

Prerequisites: English 1, 2A-B, or equivalents. May be repeated for credit up to eight units.

A course in how to write nonfictional prose.

60A. Narrative in the Western World: the Beginning through the Early Christian Period (4)

Prerequisites: English 1, 2A-B, or equivalents. English 60A should normally be taken before English 60B and 60C.

Narrative in the western world from Homer to St. Augustine. The course combines intensive reading of major narratives with historical, philosophical, and literary background. It includes such works as *The Odyssey*, *The Aeneid*, the Bible, Ovid's *Metamorphoses*, and St. Augustine's *Confessions*.

60B. Narrative in the Western World: the Middle Ages and the Renaissance (4)

Prerequisites: English 1, 2A-B, or equivalents. English 60B should normally follow English 60A and precede English 60C.

Narrative in the western world from Beowulf to Pope. The course combines intensive reading of major narratives with historical, philosophical, and literary background. It includes such works as Dante's *Divine Comedy*, *The Decameron*, *The Canterbury Tales*, *Gargantua*, and *Don Quixote*.

60C. Narrative in the Western World: the Eighteenth Century through the Modern Period (4)

Prerequisites: English 1, 2A-B, or equivalents. English 60C should normally be taken after English 60A and 60B.

Narrative in the western world from Voltaire to Beckett. The course combines intensive reading of major narratives with historical, philosophical, and literary background. It includes works by such authors as Goethe, Balzac, Dostoevsky, Mann, Solzhenitsyn, and Nabokov.

65AA-ZZ. Topics in Literature (4) Staff

Prerequisites: English 1, 2A-B, or equivalents. Course may be repeated an unlimited number of times providing the letter designations are different.

Studies of topics not limited to a specific author, period, or literary form. Specific course titles will be announced prior to the beginning of each quarter.

99. Introduction to Research (1-4)

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department. May be repeated for credit to

a maximum of eight units. No unit credit allowed toward the major.

Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research within a research group.

UPPER DIVISION

100H. Intermediate Honors Seminar (4) Staff

Prerequisites: English 1, 2A-B, or equivalents; cumulative grade-point average of 3.0, and consent of instructor.

An honors seminar for sophomores and juniors featuring advanced study of literary texts. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

101. Creative Writing (4)

Prerequisites: English 1, 2A-B, or equivalents. May be repeated for credit up to eight units.

Writing in such forms as the short story, poetry, and fiction.

102A-B-C. Major British Writers (4-4-4)

Prerequisites: English 1, 2A-B, or equivalents. For upper-division nonmajors. Not to be counted toward the English major.

A: Chaucer through Milton.

B: Dryden through Keats.

C: Tennyson to the present.

103. Writing of Fiction (4)

Prerequisites: English 1, 2A-B, or equivalents. May be repeated for credit up to 12 units.

104. Writing of Verse (4)

Prerequisites: English 1, 2A-B, or equivalents. May be repeated for credit up to 12 units. All forms.

105S-SP-SF. Seminar in Creative Writing (4-4-4)

Prerequisites: English 1, 2A-B, or equivalents. May be repeated for credit up to 12 units.

S: Various forms

SP: Poetry.

SF: Fiction.

106. Writing of Nonfictional Prose (4)

Prerequisites: English 1, 2A-B, or equivalents. May be used to satisfy the state requirement of an upper-division expository writing course for elementary and secondary teaching credentials. Credential candidates may be exempted from the writing requirement by examination. May not be counted toward the English major. May be repeated for credit up to eight units. This course does not qualify for the economics/business economics pre-major requirement.

The writing of nonfictional prose.

106WP. Writing in Preparation for Teaching (4)

Prerequisites: English 1, 2A-B, or equivalents. Satisfies the English 106 requirement for credential candidates. May be repeated for credit to a maximum of 12 units. All 106 courses count toward the permitted number of repeat units.

A writing workshop for teachers and prospective teachers. Extensive practice in writing, using writing techniques demonstrated by teacher/

consultants from the South Coast Writing Project.

107. Practical Criticism

(4)

Prerequisites: English 1, 2A-B, or equivalents.

24 units in English; English major.

Recommended for prospective teachers of English.

A combined writing and criticism course for advanced students of literature and prospective English teachers; special attention given to teaching others to write.

108. Practicum in the Composing Process

(4)

Prerequisites: English 1, 2A-B, or equivalents.

May be repeated for credit to a maximum of 12 units.

A workshop in the composing process, emphasizing experiments and exercises in invention, writing, revision, and work in writing-response groups. Includes an examination of recent research in composition. Ordinarily offered under direction of South Coast Writing Project.

108T. Advanced Writing Workshop and Practicum for Tutors

(5) Staff

Prerequisites: English 1, 2A-B, writing sample, consent of instructor, and strong interest in tutoring or teaching writing.

Intensive practice in academic writing and in responding to writing. Includes examination of composition theory as it applies to writing in academic disciplines. Also includes internship in UCSB Tutorial Center.

109A. Writing for Science and Technology

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Analysis and practice of various forms of scientific and technical writing, both academic and professional, such as reports, proposals, journal articles, and abstracts. Attention to research methods, design of papers, development of graphics, technical style, and editing strategies. Discussion/workshop format.

109B. Writing for the Social Sciences

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Analysis and practice of various forms of writing for the social sciences, both academic and professional. Attention to research methods, design of papers, development of graphics, stylistic clarity, and editing strategies. Discussion/workshop format.

109C. Writing for Economics and Business Economics

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Strategy, style, format for various types of academic and professional writing practiced in economics, including papers, reviews, abstracts, proposals. Attention to visual aspects of communications, design, and graphics.

109D. Legal Writing

(4) Staff

Prerequisites: English 1, 2A-B, or equivalents.

Practice in applying rules to facts, in analyzing issues, and in writing clearly, succinctly, and cogently in various forms of legal discourse.

110AA-ZZ. Adjunct Writing

(2)

Prerequisites: English 1, 2A-B, or equivalents.

P/NP only. May be repeated for credit up to six units.

Practice in writing within the conventions of an academic discipline. Each section is taught in

conjunction with a specified academic course, and writing assignments are based on the subject matter of the companion course.

111. The History of the English Language

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Development of English vocabulary, pronunciation, and grammatical structure from Old English to the present.

113. Literary Theory and Criticism

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Exploration of the critic's methods and objectives; study of selected major critical documents from Aristotle to the present.

114. Gender Studies

(4) Staff

Prerequisites: English 1, 2A-B, or equivalents.

Explorations of such topics as feminist theory and criticism, feminism and literature, and selected women writers. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

115. Medieval Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.

English and Continental literature through the fifteenth century, exclusive of the *Canterbury Tales* but including such works as *Beowulf*, *Morte d'Arthur*, *Sir Gawain and the Green Knight*, and selected romances and lyrics.

116A. The English Bible as Literature: The Old Testament

(4)

Prerequisites: English 1, 2A-B, or equivalents.

The English Bible as literature. Places primary emphasis on the Old Testament.

116B. The English Bible as Literature: The New Testament

(4)

Prerequisites: English 1, 2A-B, or equivalents.

The English Bible as literature. Places primary emphasis on the New Testament.

116C. The English Bible as Literature: Introduction

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Students may not take English 116C if they have taken 116A or 116B.

The English Bible as literature. A survey of the Old and New Testaments.

117A. Shakespeare, Poems and Earlier Plays

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Major poems and plays of Shakespeare, 1593-1602, including such works as the Sonnets, *Hamlet*, *A Midsummer Night's Dream*, *Henry the Fourth*, *Twelfth Night*.

117B. Shakespeare, Later Plays

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Major works of Shakespeare from 1603-1613, including such plays as *King Lear*, *Macbeth*, *Antony and Cleopatra*, *Othello*, *The Tempest*.

117C. Shakespeare, Advanced Studies

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Advanced study of Shakespearean topics.

117D. Shakespearean Renaissance Academy

(8)

Prerequisites: English 1, 2A-B, or equivalents.

Of the eight units of credit, four may be used to satisfy English 117A-117B.

An intensive course in Shakespeare and the Renaissance hosted either at the Institute of Renaissance Studies in Ashland, Oregon, or at Glenston Manor, England. (SS)

117E. Shakespeare

(4)

Prerequisites: English 1, 2A-B, or equivalents.

A general introduction for nonmajors.

120. Modern Drama

(4)

Prerequisites: English 1, 2A-B, or equivalents.

European and American drama from Ibsen to the present.

124. Readings in the Modern Short Story

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Consult the *Course Outline Booklet* in the department office for the authors read in any particular quarter.

126A. Survey of British Fiction (I)

(4)

Prerequisites: English 1, 2A-B, or equivalents.

The eighteenth century. Such writers as Defoe, Richardson, Fielding, Smollett, and Sterne.

126B. Survey of British Fiction (II)

(4)

Prerequisites: English 1, 2A-B, or equivalents.

The nineteenth century to 1850. Such writers as Austen, the Brontes, Thackeray, and Dickens (earlier novels).

126C. Survey of British Fiction (III)

(4)

Prerequisites: English 1, 2A-B, or equivalents.

The nineteenth century from 1850. Such writers as Dickens (later novels), Eliot, Trollope, and Hardy.

126D. Survey of British Fiction (IV)

(4)

Prerequisites: English 1, 2A-B, or equivalents.

The twentieth century. Such writers as Conrad, Joyce, Lawrence, Forster, Virginia Woolf, and Huxley.

128. Autobiography

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Detailed readings of autobiographical writings in various modes. Such writers as Franklin, Douglass, Mailer, Trollope, Mill, and Rousseau. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

130A. Major American Writers to Civil War

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Such writers as the Puritans, Edwards, Franklin, Emerson, Thoreau, Poe, Hawthorne, Melville, and Whitman.

130B. Major American Writers from Civil War to 1917

(4)

Prerequisites: English 1, 2A-B, or equivalents.

Such writers as Whitman, Dickinson, Twain, Howells, James, Crane, Chopin, Dreiser, and Norris.

130C. Major American Writers from 1917 to the Present

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Frost, Eliot, Pound, Hemingway, Fitzgerald, Faulkner, Steinbeck, O'Connor, and Bellow.

131. Studies in American Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
May be repeated with consent of department chair to a total of eight units if course content varies.

Topics will vary from quarter to quarter. To see what is being taught any particular quarter, students should consult the department's *Course Outline Booklet*.

132AA-ZZ. Studies in American Writers

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Repeat credit up to 8 units will be given providing letter designations are different.

Courses in individual American writers such as: HM. Hawthorne-Melville; J. Henry James; T. Mark Twain; H. Ernest Hemingway; F. William Faulkner; D. Emily Dickinson; FR. Robert Frost; W. Walt Whitman.

133A. Literature of the American South

(4)

Prerequisites: English 1, 2A-B or equivalents.
Such writers as Cable, Twain, Glasgow, Caldwell, McCullers, O'Connor, and Welty.

133B. Literature of California and the West

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Dana, Harte, Norris, Grey, Rolvaag, Cather, and Steinbeck.

133D. American Jewish Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Henry Roth, Philip Roth, Wallant, Bellow, Singer, Malamud, and Salinger.

135. The Puritan Tradition in American Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
The development of the main ideas of American Puritanism.

136. Nineteenth-Century American Literature

(4)

Prerequisites: English 1, 2A-B or equivalents.
A study of major works from nineteenth-century American literature that will include selections from Hawthorne, Melville, Whitman, Dickinson, Mark Twain, and Henry James.

137. Major American Poets

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such poets as Whitman, Dickinson, Frost, Williams, Crane, Stevens, Poe, Eliot, and Lowell.

138A. American Fiction before 1860

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Brockden Brown, Irving, Cooper, Hawthorne, Melville, and Poe.

138B. American Fiction, 1860 to 1917

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Howells, James, Twain, Norris, Crane, Chopin, Dreiser, and London.

138C. American Fiction after 1917

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Fitzgerald, Hemingway, and Faulkner.

139. American Literature and the American Environment

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Students who have received credit for English 141 may not take this course for credit.
A study of literary responses to the American landscape. Reading and discussion of various American novelists, poets, and prose writers. For other courses in American literature see English 189, 190, and 191.

144. The European Renaissance

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Helps to fulfill the English major requirement in foreign language (Option 2).
Such authors as Petrarch, Boccaccio, Rabelais, Montaigne, Erasmus, More, and Machiavelli.

145. Studies in English Renaissance Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
May be repeated with consent of department chair to a total of eight units if course content varies.
Studies in English literature of the period from 1500 to 1660. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

146. English Renaissance Verse and Prose

(4)

Prerequisites: English 1, 2A-B, or equivalents.
An upper-division survey of English non-dramatic verse and prose from the years 1500 to 1660. Such writers as Herbert, Donne, Marvell, Jonson, and Sir Thomas Browne.

149. Gaelic Backgrounds to Anglo-Irish Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Translations of poetry, folktales, sagas, and mythological works from early and modern Irish. These will be read both for their own fascination and for their influence on such writers as Yeats, Joyce, Synge, and O'Casey.

150. Anglo-Irish Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
A study of twentieth-century Irish literature written in English against a background of Irish history during the struggle for independence and later. Major emphasis on Yeats, Joyce, Synge, and O'Casey; other writers of the period, such as Stephens, O'Flaherty, O'Connor, and Behan, will also be touched on.

151AA-ZZ. Studies in British Writers

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Repeat credit up to eight units will be given providing letter designations are different.
Courses in individual writers such as: S. Spenser; D. Donne-Jonson; DR. Dryden; P. Pope; SW. Swift; RF. Richardson-Fielding; J. Johnson; BL. Blake; W. Wordsworth; CD. Dickens; L. Lawrence; and Y. Yeats.

152A. Chaucer: Canterbury Tales

(4)

Prerequisites: English 1, 2A-B, or equivalents.

152B. Chaucer: Troilus and Criseyde and the Minor Poems

(4)

Prerequisites: English 1, 2A-B, or equivalents.

153. Yeats, Pound, Eliot

(4)

Prerequisites: English 1, 2A-B, or equivalents.

154. British and American Verse Since 1900

(4)

Prerequisites: English 1, 2A-B, or equivalents.
May be repeated for credit to a maximum of 12 units, with the consent of the chair, if different material is covered.

155. The Symbolist Movement

(4)

Prerequisites: English 1, 2A-B, or equivalents.
A course on the symbolist movement in France and England.

157. English Renaissance Drama

(4)

Prerequisites: English 1, 2A-B, or equivalents.
A course in the English drama of the period from 1500 to 1642, excluding Shakespeare. Such writers as Marlowe, Jonson, Dekker, Heywood, and Webster.

162. Milton

(4)

Prerequisites: English 1, 2A-B, or equivalents.

165AA-ZZ. Topics in Literature

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Course may be repeated an unlimited number of times, providing the letter designations are different. Only eight units of major credit will be allowed.
Studies of topics not limited to a specific author, period, or literary form. Specific course titles will be announced prior to the beginning of each quarter. Recent topics have included women writers, the existentialists, and religion and poetry.

168. Restoration and Eighteenth-Century Verse and Prose

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Nondramatic works by such writers as Dryden, Pope, Swift, Cowper, Gray, Johnson, and Boswell.

169. Restoration and Eighteenth-Century Drama

(4)

Prerequisites: English 1, 2A-B, or equivalents.
Such dramatists as Dryden, Etherege, Wycherley, Congreve, and Sheridan.

170. English Satire

(4)

Prerequisites: English 1, 2A-B, or equivalents.
The satires of such writers as Donne, Rochester, Dryden, Swift, Pope, and Johnson.

172. Studies in the Enlightenment

(4)

Prerequisites: English 1, 2A-B, or equivalents.
May be repeated with consent of department chair to a total of eight units if course content varies.
A course in the neoclassical literature of England and the Continent. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

177. The Age of Romanticism

(4)
Prerequisites: English 1, 2A-B, or equivalents.
English and Continental literature of the romantic movement.

178. Nineteenth-Century Prose

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Nonfiction prose writers of the romantic and Victorian periods, such as Coleridge, Hazlitt, Arnold, and Carlyle.

179. British Romantic Writers

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Blake, Wordsworth, Coleridge, Byron, Keats, Shelley, Lamb, and Hazlitt.

180. The Victorian Era

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Such writers as Browning, Tennyson, Hopkins, Hardy, and the pre-Raphaelites.

181. Studies in the Nineteenth Century

(4)
Prerequisites: English 1, 2A-B, or equivalents.
May be repeated with consent of department chair to a total of eight units if course content varies.
A course in the romantic and Victorian periods. Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

184. Modern European Literature

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Helps to fulfill the English major requirement in foreign language (option 2). Such authors as Dostoyevsky, Tolstoy, Proust, Kafka, Mann, and Sartre in translation.

187. Studies in Modern Literature

(4)
Prerequisites: English 1, 2A-B, or equivalents.
May be repeated with consent of department chair up to a total of eight units if course content varies.
Topics will vary from quarter to quarter. To see what is being taught in any particular quarter, students should consult the department's *Course Outline Booklet*.

189. Contemporary Literature

(4) Staff
Prerequisites: English 1, 2A-B, or equivalents.
Study of English and American contemporary drama, fiction, and poetry written since 1960.

190. Ethnic Literature

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Writings in English by natives of such countries as India and Ghana, and by American Negroes, Indians, and Mexican-Americans.

191. Readings in Afro-American Literature

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Such major Afro-American writers as Chesnutt, Dunbar, Bontemps, Ellison, Baldwin, and Wright, with emphasis on psychic and cultural contexts.

192. Science Fiction

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Suitable for majors as well as nonmajors.
The course examines science fiction as a literary genre. Emphasis throughout is upon the nature and development of the genre in its historical and cultural context.

193. Detective Fiction

(4)
Prerequisites: English 1, 2A-B, or equivalents.
Critical and historical study of fiction from the classics of Poe, Conan Doyle, and Christie to the many contemporary kinds.

194. Group Studies for Advanced Students

(2-4)
Prerequisites: English 1, 2A-B, or equivalents.
May be taken only once for elective credit in the major. Enrollment normally limited to 12 or fewer students.
Designed to meet special curricular problems.

196. Honors English

(4)
Prerequisites: English 1, 2A-B, or equivalents.
For students in the English department's honors program only.

197. Senior Seminar

(4)
Prerequisites: English 1, 2A-B, or equivalents.
One quarter is required; may be repeated once for additional credit.
An undergraduate seminar limited to senior English majors (or juniors with consent of the instructor). Content will vary with each instructor.

199. Independent Studies in English

(1-5)
Prerequisites: English 1, 2A-B, or equivalents.
Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in English. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.
Reading and conference for students with upper-division standing.

GRADUATE COURSES

200. Methods of Literary Study

(4)

201. Literary Criticism: Plato to Jonson

(4)

202. Literary Criticism: Dryden to the Present

(4)
English 201 is not prerequisite to 202.

203. Creative Writing

(4)
Prerequisite: consent of instructor.

205A. Old English

(4)
Introduction to the language and prose.

205B. Old English

(4)
Prerequisite: English 205A.
Shorter poems and introduction to *Beowulf*.

205C. Old English

(4)
Prerequisites: 205A-B.
Completion of *Beowulf*.

206. The History of the English Language

(4)

207. The Structure of the English Language

(4)

208. Applied Rhetoric, Poetics, and Linguistics

(4)
The application of linguistic and rhetorical principles to the study of literature. Emphasis on practical criticism.

211. Studies in the History of Criticism

(4) Staff
Prerequisite: graduate standing.
Rapid survey of the major theories from the Greeks to 1900 with special emphasis on British and American critics.

220. Theory of Composition

(4)
An examination of current theories of composition and their intellectual background with a review of recent research in the composing process and in related fields. Includes experiments and exercises in composing and in analyzing compositions, using written work of class members.

Contents of "studies" courses listed below will vary from quarter to quarter, therefore, these may be repeated for credit with the consent of the chair of the department graduate committee.

230. Studies in Medieval Literature

(4)

231. Studies in Renaissance Literature

(4)

232. Studies in Restoration and Eighteenth-Century Literature

(4)

233. Studies in Nineteenth-Century Literature

(4)

234. Studies in Twentieth-Century Literature

(4)

235. Studies in American Literature

(4)

236. Studies in Literary Criticism and Theory

(4)

237. Studies in Genres, Themes, Approaches

(4)

238. Scholarly Editing

(4)
An introduction to the theory and practice of modern scholarly editing, using examples drawn from both literary and historical documents.

265AA-ZZ. Seminar in Special Topics

(4-4)
Prerequisite: graduate standing. *Providing that the letter designations are different, the course may be repeated for credit with the consent of the graduate advisor.*
Content of two-quarter course will vary from year to year.

270. Studies in Poetry

(4)

271. Studies in Drama

(4)

272. Studies in Fiction

(4)

297. Graduate Studies

(4)
Graduate tutorial involving regular conferences with instructor and directed research toward

seminar paper(s). Attendance at relevant upper-division lectures also required.

596AA-ZZ. Directed Reading and Research

(1-4)

Individual tutorial. A written proposal for each tutorial must be approved by the department chair and filed with the Graduate Division

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12)

Maximum of 12 units per quarter. S/U grade. Enrollment limited to 24 units per examination. No unit credit allowed toward advanced degree(s).

Instructor should be the student's major professor or the chair of the doctoral committee.

598. Directed Teaching

(4)

Prerequisite: appointment as a teaching assistant. S/U grading.

Supervision and instruction of teaching assistants. Continuing instruction in the teaching of the departmental course in "First Year Reading and Composition." Teaching assistants must register for this course.

599AA-ZZ. Dissertation Research and Preparation

(1-12)

Only for research underlying the dissertation, writing the dissertation.

RELATED COURSES IN OTHER DEPARTMENTS

Education SE 318A-B. Teaching Writing Across the Curriculum

(1-1) Blau

Prerequisite: admission to the Single Subject or Multiple Subject Credential Program.

A participatory workshop providing a theoretical framework and practical methodology for using writing as a tool for learning at every level and in all fields of study. Features demonstration lesson by teacher/consultants of the South Coast Writing Project.

Education SE 390. Curriculum and Instructional Procedures and Materials Used in Teaching English in the Secondary School

(1)

Prerequisites: admission to secondary credential program in English. Three quarters required.

Seminar for student teachers in classroom application of educational theory to the teaching of English.

Education SE 392. Student Teaching: English

(3-6)

Prerequisites: Education SE 390 and admission to student teaching.

Education SE 393. Problems Seminar in Teaching of English

(1)

Prerequisite: taken concurrently with supervised teaching.

This seminar will cover problems related to student teaching.

Education SE 394. Current Trends in the Teaching of English

(4)

Seminar, limited to experienced teachers of English, aiming to reassess the goals and methods for the teaching of English.

Education SE 396. Writing Project Approaches to Teaching Composition

(1-6)

Approaches to teaching composition at all levels and in all disciplines. Features demonstrations of proven techniques by fellows, staff, professional authors, and visiting scholars from the South Coast Writing Project. Includes examination of theory and research base for practices.

Linguistics 160. The Structure of English

(4)

Environmental Studies

Environmental Studies Program, Phelps Hall 3206; Telephone (805) 961-2968. Program Chair: David Brokensha.

Faculty

- Daniel B. Botkin, Ph.D., Rutgers University, Professor (*environmental biology, global ecology*). Joint appointment with the Department of Biological Sciences
- David Brokensha, D. Phil., Oxford University, Professor (*social and environmental change, Africa*). Joint appointment with the Department of Anthropology
- Margriet Caswell, Ph.D., UC Berkeley, Assistant Professor (*agricultural and resource economics*). Joint appointment with the Department of Economics
- Garrett Hardin, Ph.D., Stanford University, Professor Emeritus
- Julia Allen Jones, Ph.D., Johns Hopkins University, Assistant Professor (*management of natural resources, soil-plant relations*). Joint appointment with the Department of Geography
- Edward A. Keller, Ph.D., Purdue University, Professor (*environmental geology, geomorphology*). Joint appointment with the Department of Geological Sciences
- Melvyn S. Manalis, Ph.D., University of California, Santa Barbara, Lecturer (*energy, computer use for the environmental studies major*)
- J. Marc McGinnes, J.D., University of California, Berkeley, Lecturer (*environmental law and policy*)
- Roderick W. Nash, Ph.D., University of Wisconsin, Professor (*environmental history*). Joint appointment with the Department of History
- Bernard Riley, Ph.D., Indiana University, Lecturer (*ecology of mining activities, Third World environmental problems, man's impact on natural vegetation communities*)
- Orrin Sage, Jr., Ph.D., University of California, Santa Barbara, Lecturer (*environmental impact analysis and agricultural land-use studies*)
- Arent H. Schuyler, Jr., M.A., UC Santa Barbara, Lecturer with Security of Employment (*energy policy*)
- Paul Wack, M.A., California State University, Northridge, Adjunct Lecturer (*planning*)

(In addition to the regular faculty, outside professionals who are not listed in the catalog teach courses in the Environmental Studies Program.)

Executive Committee

- Stanley Awramik, Ph.D. (Geological Sciences)
- Daniel Botkin, Ph.D. (Environmental Studies/ Biological Sciences)
- David Brokensha, Ph.D., (Anthropology/ Environmental Studies)
- Margriet F. Caswell, Ph.D. (Environmental Studies/Economics)
- Joseph H. Connell, Ph.D. (Zoology)
- Jeff Dozier, Ph.D., (Geography)
- John Ernest, Ph.D. (Mathematics)
- Julia Jones, Ph.D. (Geography)
- Edward A. Keller, Ph.D. (Geological Sciences)
- Wilbert Lick, Ph.D. (Mechanical and Environmental Engineering)
- Roderick Nash, Ph.D. (History/Environmental Studies)
- Arent H. Schuyler, Jr., M.A. (Environmental Studies)
- Jon Sonstelie, Ph.D. (Economics)

The environmental studies curriculum is designed to give students the intellectual skills and scholarly background needed to understand interactions between humans and their environment. This process involves many related subjects integrated to provide a rigorous analysis of environmental issues.

To provide a coherent structure, students who major in environmental studies follow a program of courses in an environmental studies concentration, which presently include environmental planning, natural resources management, environmental law, energy, and Third World studies.

Many environmental studies undergraduates go on to graduate school for further study in areas such as public policy, city and regional planning, social sciences, law, education, or physical, chemical, and biological science. Students with plans for graduate study are encouraged to complete a double major. Approximately 40 percent of environmental studies students earn a double major with departments such as anthropology, biological sciences, economics, history, geography, and geological sciences. Double majors with other departments are also encouraged.

The environmental studies major has prepared students for entry-level positions in a diverse number of fields, including urban and regional planning, environmental impact analysis, natural resource management, environmental education, lobbying, government, and business. Employment opportunities often result from a synthesis of coursework and supervised internships in a chosen career area. While not required, academic internships are an integral part of the environmental studies curriculum.

Students with a particular interest in environmental education may wish to pursue a California teaching credential after completing the requirements for the bachelor's degree in environmental studies. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

The program welcomes transfer and continuing students. In some cases credit toward the major requirements can be given for courses previously taken.

Bachelor of Arts—Environmental Studies

The major is divided into three parts: preparation, upper-division requirements within environmental studies, and the concentration or double major. All majors must select an environmental studies concentration. To complete a concentration, students must complete both environmental studies courses and courses chosen from other department offerings.

Preparation for the major. Required: Environmental Studies 11, 12, and 13; Economics 1 or 109; Philosophy 3; one quarter of calculus or P/STAT 33; and one course from each of the following:

- 1) Chemistry 1A-1AL or 25 or Natural Science 1B.
- 2) Physics 6A or 10 or Natural Science 1A.
- 3) Biology 11A or 20 or Botany 20 or Natural Science 1C.

Upper-division requirements within environmental studies. All environmental studies majors must take 15 required units and 24 elective units for a total of 39 units within the environmental studies major. Required upper-division units are: Environmental Studies 115, 164, 190, and 197A-B. The 24 units of elective courses must be selected for one of the following environmental studies concentrations: environmental planning, natural resource management, environmental law, energy, and Third World studies. Lists of courses for the environmental studies concentrations that satisfy this requirement are available from the undergraduate adviser. In special circumstances, other environmental studies concentrations may be proposed by individual students. All environmental studies students must have their concentration approved by the undergraduate adviser.

Double Major or Concentration. Environmental studies majors must either have a second major or complete a concentration. Double majors must complete the requirements of the second major. Single majors must complete 20 upper-division units in a concentration composed of classes outside environmental studies. The concentration may be either in one outside department, or in several outside departments, as long as the courses taken are all part of a recognized environmental studies concentration. A list of upper-division courses outside environmental studies that satisfy this requirement is available from the undergraduate adviser.

Senior Thesis. All environmental studies students are required to complete a thesis, which involves independent research and writing and a final oral presentation to faculty and students.

ENVIRONMENTAL STUDIES COURSES

LOWER DIVISION

11. The Social Environment

(5) Nash

Lecture, 4 hours; discussion, 1 hour.

An interdisciplinary and problem-oriented effort to understand how human beings and the environment have interrelated throughout history. Topics include Indians, frontiersmen, the conservation movement, environmental ethics, California water problems, and the environmental effects of nuclear war.

12. The Physical Environment

(5) Keller

Recommended: Chemistry 25 or 1, Physics 10 or 6. Lecture, 4 hours; discussion, 1 hour; field trips.

Introductory examination of land, water, and air problems resulting from human occupancy of the earth's surface. Emphasis is on urbanization and associated environmental problems. Topics include air and water pollution, urban climate, hazards evaluation, and energy sources and uses. (W)

13. The Biological Environment

(5) Botkin

Recommended: Chemistry 25 or 1, Physics 10 or 6, Biology 20 or 11. Lecture, 3 hours; laboratory, 3 hours.

A study of general principles of ecology and their implications for analyzing environmental problems. Topics include the nature of the biosphere, ecosystem structure and function, and population dynamics. Case histories will be discussed that demonstrate the application of these concepts to the management of renewable natural resources. (S)

UPPER DIVISION

104. Deserts in Transformation

(4) Jones, Staff

Prerequisites: Geography 3 or Environmental Studies 11, 12 and 13, or consent of instructor. Cross listed as Geography 113. Lecture, 3 hours.

Discussion of human relationships with desert systems. Overview of uninhabited deserts, human desert cultures, climate change, microclimate, the role of grazing and other factors contributing to change in deserts.

105. Solar Energy and the Environment

(4) Manalis

Prerequisite: must have completed at least one course from the general education science area. Lecture, 3 hours.

How solar energy fits with environmental-energy options in both developed and developing nations is a focus of the course. Direct and indirect technologies are studied in terms of their effects on the physical, social, economic, and utility environments. There will be some demonstrations, field trips, and guest lecturers.

106. Environmental Argument

(4) Staff

Prerequisite: Philosophy 3 or consent of instructor.

A study of the skills involved in criticizing and constructing effective environmental arguments, specifically focusing on reasoning, decision making, and values. Concentrating on specific environmental issues, students will learn to develop effective and sustained arguments for their own positions.

110. The Ocean Environment Part II: The Ocean's Vertebrates

(4) Staff

Prerequisite: Environmental Studies 109 and/or background in marine biology. Lecture, 3 hours.

Drawing on principles developed in Environmental Studies 109, this course will cover the biology and ecology of marine vertebrates with emphasis on marine mammals, explore mammalian adaptation to aquatic existence, introduce the systematics and general biology of marine mammals, discuss the role of marine mammals in major marine ecosystems, and consider historic and contemporary problems of fisheries involving marine mammals.

111. The California Channel Islands

(4) Staff

Prerequisite: Environmental Studies 12 or 13 or Geography 3 or consent of instructor. Students who have received credit for Environmental Studies 112A may not take this course for credit.

Discussion of biological, geological, meteorological, anthropological, and oceanographic characters of the Channel Islands area, as well as the management and conflicting human uses of this region. Detail is given to the islands and ocean waters found off Southern California.

112. Parks and Preserves: History and Management

(4) Nash

Prerequisite: Environmental Studies 11 or 12 or 13 or History 173T or consent of instructor.

Study of the evolution of the national parks as an American contribution to world civilization. Special attention to the politics and economics of natural and cultural preservation and to the growing profession of park management.

115. Energy and the Environment

(4) Schuyler

Prerequisites: Economics 1 and Physics 10. Lecture, 3 hours; discussion, 1 hour.

A survey of man's present and future use of energy. The technical problems, the environmental effects, and the economic costs of each energy source are considered. Elementary thermodynamics, radiation, nuclear reactions, electricity, and risk analysis are studied. (W)

116. The Urban Environment

(4) Wack

Lecture, 3 hours.

A survey of the problems of and prospects for the American urban environment, including an investigation of the complex relationships between the central city and its suburbs and rural communities. Field study of the local urban environment will be part of the course. (SS)

120. Toxins in the Environment

(4) Staff

Prerequisites: completion of Environmental Studies 11, 12, 13, introductory courses in chemistry, physics, biology, economics, and statistics or mathematics. Recommended electives in biology, biochemistry, pharmacology. Lecture, 3 hours.

Effects and implications for the future of introducing toxins into the biosphere. Physiological and biochemical effects and the mechanisms of action of potential toxins will be examined. Methodological approaches and legal ramifications of studies in environmental toxicology will be discussed. (S)

121. Environmental Effects of Nuclear War

(4) Staff

Prerequisite: major in environmental studies or in the physical or biological sciences, or consent of instructor. Lecture, 3 hours.

Biotic effects of residual ionizing radiation. Climatic and atmospheric changes. Effects on terrestrial, ocean, and coastal ecosystems. Effects on the human environment including agriculture, global food, and freshwater supplies. Genetics and epidemiology. Prospects for human survival. (W)

122. World Population and Food Supply

(4) Staff

Lecture, 3 hours.

The main purpose of this course is to analyze the underlying causes of the world food/population problem. Such topics as high birthrates in underdeveloped nations and environment implications of different agricultural and population strategies will be considered. (W)

123. Ocean Law and the Environment

(4) Staff

Prerequisites: Environmental Studies 11, 12, and 13, or consent of instructor. Lecture, 3 hours.

An introduction to the international legal order pertaining to the ocean environment, with an emphasis on the law of the sea. Treaties, international conventions, and agreements involving ocean resources, marine mammals, pollution, and the protection of sensitive areas are discussed. (S)

125. Principles of Environmental Law

(4) McGinnes

Lecture, 3 hours.

An introductory to the history and methodology of law as it relates to man's use of the environment. (F)

126A. Environmental Law: Simcoast

(4) McGinnes

Prerequisites: Environmental Studies 125 and consent of instructor. Seminar, 3 hours

Simulation of the planning and permitting process under current coastal protection laws. Students play roles in game situations based on actual cases from legal dockets. (W)

126B. Environmental Law: Advanced Study and Practice

(4) McGinnes

Prerequisites: Environmental Studies 125, 126A, and consent of instructor. Seminar, 3 hours.

A detailed analysis and practical experience in selected areas of environmental law. The importance of the environmental scientist, as fact-finder and expert witness, is to be stressed and illustrated. Local specialists, attorneys, and public officials will be invited to participate in discussions of specific environmental law issues, and the students will have the opportunity to work in teams, under expert supervision on current cases. (S)

127. Concepts of Environmental Education

(4) Staff

Prerequisites: Environmental Studies 11, 12, and 13, or consent of instructor. Lecture, 3 hours.

A critical look at educational programs and teaching methods which concentrate on the development of environmental awareness and the shaping of environmental values. Understanding underlying concepts. Focus on programs which emphasize study of the natural environment and problem-solving skills. (W)

130A-B. Third World: Environments and Prospects

(4-4) Brokensha, Riley

Environmental studies 11 or 12 or 13, or consent of instructor. Lecture, 3 hours.

Two quarters of a three-quarter sequence. The first part emphasizes the rural areas, the second the urban and industrialized sectors. Both parts use selected case studies to illustrate such problems as use of major resources (water, land, plants, animals) and new issues arising from increased population, urbanization, and development interventions. (F,W)

130C. Specialized Environmental Problems of the Third World

(4) Riley

Prerequisites: Environmental Studies 130A-B, or consent of instructor. Seminar, 3 hours.

Seminar papers presenting in-depth analysis relevant to student's own major of topics and areas of Third World/less developed countries environmental issues and problems. Topics chosen by students with guidance and help of instructors. (S)

132. Vegetation and Manmade Environment

(4) Riley

Lecture, 3 hours.

The consequences of man's four major behavioral innovations—use of fire, agricultural tools, industrial resource utilization, and applied

microscopia—on vegetational ecological associations of the past, present situation, and prospects for the future in temperate and tropical forests. (Not offered 1986-87.)

133. Environments and Mining Activity: Man's Mining Activities Past and Present

(4) Riley

May be repeated for credit to a maximum of eight units. Lecture, 3 hours.

A survey of man's usage of mineral resources of the earth's physical environment, and the macro- and micro-environmental problems associated with utilization.

134. Coastal Processes and Management

(4) Keller

Prerequisite: Environmental Studies 12 or Geology 2 or Geography 3 or consent of instructor. Lecture, 3 hours.

Using representative coastal regimes, students will study the major processes at work in our nation's coastal zones and will examine the nature and efficacy of the planning and management programs that have been put in place in these areas.

135. Principles of Environmental Planning

(4) Wack

Prerequisite: Environmental Studies 116 or consent of instructor. Lecture, 3 hours.

An introduction to the history and theory of urban, regional, national, and international planning for responsible use of the environment. Field trips to local urban areas. (F,S)

136. Managing Coastal Areas: Theory and Practice

(4) Staff

Prerequisites: Environmental Studies 11, 12, and 13; or consent of instructor.

Review of principles of coastal zone management and discussion of the United States experience with these new environmental concepts and procedures. Emphasis on understanding the political difficulties associated with program implementation and the problems of evaluation of program effectiveness.

137. California Agriculture and Associated Environmental Effects

(4) Sage

Prerequisite: Economics 1 or 2 or 109, or consent of instructor.

Study of the development of California agricultural trends, practices, markets agribusiness corporations. (F)

138. Economics and Land Use

(4) Caswell

Prerequisites: Economics 1 and 2, or Economics 109 or consent of instructor. Lecture, 3 hours.

Economic analysis of the use of land-based natural resources for agriculture, housing, and recreation. Public policy issues such as growth control, zoning, and coastal protection will be included in the analysis. (W)

140. Management of Renewable Resources: Biological Principles and Techniques

(4) Botkin

Prerequisite: upper-division standing or consent of instructor. Lecture, 3 hours.

The course will offer an introduction to the ecological principles common to wildlife, range, and

forest management, followed by a discussion of the historic development of these disciplines and a survey of management practices and applications. Case studies and field trips.

141. Management of Renewable Resources: Quantitative Methods

(4) Staff

Prerequisites: upper-division standing and consent of instructor. Lecture, 3 hours; laboratory, 2 hours.

This course will offer an introduction to quantitative methods used in the management of renewable resources such as fisheries, forestry, and endangered species. Topics discussed include maximum and optimum sustainable yields and applications of techniques such as computer simulation, stochastic processes, and dynamic programming to renewable resource management.

142. Global Forest Management

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

This course will explore global implications of present and future human use of the world's forests. Case studies of forest management in different biomes will be presented. The prime focus of the course will be the question of whether human use of our forest resources is exceeding ecological limits.

144. Form, Process, and Human Use of Rivers

(4) Keller

Prerequisites: Geology 117, Geography 112, Geography 113, or consent of instructor. Lecture, 3 hours; laboratory, 3 hours; field, 3 hours.

Basic understanding of fluvial (river) hydrology. In-depth evaluation of channel form and fluvial processes and impact of human use in rivers.

161. Environmental Journalism: A Survey

(4) Staff

Prerequisites: Environmental Studies 11, 12, and 13; or consent of instructor.

A study of how environmental issues are and should be reported by all types of news media. Students will be assigned to write several environmental news and feature stories.

163. Ecodevelopment: Global Resources and Conservation

(4) Jones

Prerequisite: Environmental Studies 146 or consent of instructor.

Analyzes development and management of major natural resources in developed and developing areas. Case study examples of water, energy, non-fuel minerals, forests, housing, and evaluation based on principles of preservation, conservation and development.

164. Introduction to Environmental Analysis

(4) Jones

Prerequisites: Environmental Studies 11, 12, and 13, or consent of instructor.

Introduction to problems and practice in analysis of man's environment. Environmental management in ancient and modern cultures, major natural resources and characteristic ecosystems of the United States, concepts and methods on environmental management. Emphasis on critical analysis of environmental impacts.

165A-B. Environmental Impact Analysis
(4-4) Sage

Prerequisites: Environmental Studies 11, 12 and 13 or consent of instructor for 165A. Environmental Studies 165A and consent of instructor for 165B.

A: Analyzes the historical and theoretical approaches to environmental assessment methodology and procedures for preparing and reviewing environmental impact reports.

B: Advanced seminar focuses on environmental inventories, proposals, and environmental impact report analysis and preparation.

177. Advanced Environmental Economics

(4) Caswell

Prerequisite: Economics 115, or consent of instructor. Lecture, 3 hours.

The course emphasis is on the economic analysis of contemporary environmental problems and the policy alternatives for their solution. Topics may include toxic substances, acid rain, endangered species, and recreation valuation. (W)

180. Studies of Regional Environmental Problems

(4) Staff

Prerequisite: junior or senior standing. Lecture, 3 hours.

A multidisciplinary study of Los Padres National Forest adjacent to Santa Barbara. Disciplines involved include geology, ecology, history, political science, and resource management. (S)

181. Canyonlands Seminar

(4) Nash

Prerequisites: History 173T, upper-division standing, consent of instructor. Field trip will be required.

Study of the environmental characteristics of the desert canyonlands of Arizona and Utah with an emphasis on the history of, and policy alternatives for, one of the nation's fastest developing regions. (S)

182. Appropriate Technology

(4) Staff

Prerequisites: Environmental Studies 11, 12, 13, 164, or consent of instructor. May be repeated for credit to a maximum of 12 units. Seminar, 2 hours, laboratory 2 hours.

Design, development, evaluation of human habitats and life supporting systems, including agriculture, energy, water and waste management. Emphasis on systems that promote economic well-being while sustaining local ecosystems. Readings; seminars; field project at UCSB Greenhouse or Gildea Resource Center. (S)

190. Current Topics in Environmental Studies

(1) Schuyler

Prerequisites: Environmental Studies 11, 12, and 13. This course is required by majors for graduation. May be repeated for credit to a maximum of two units.

Required attendance at five public lectures dealing with environmental topics. Weekly discussion sections on the lectures and brief written evaluations of the three lectures which, in the student's judgement, were the best.

192. Internship in Environmental Studies
(1-12) Staff

Prerequisites: upper-division status, 3.0 overall grade-point average, environmental studies majors only, approval by department. May be repeated for credit to a maximum of 12 units but only four units count toward the major; offered P/NP only.

Opportunities to learn about practical approaches to environmental problem solving by working under faculty direction as interns with local, state, and federal agencies concerned with the

environment or with private research and business organizations. Periodic and final reports will be part of the internship. (F,W,S,SS)

194. Group Study

(1-5) Staff

Prerequisites: upper-division status or consent of instructor. Admission by special arrangement with the environmental studies committee chair. May be repeated for credit three times but no more than four units may be counted toward the major.

Directed group reading and study on specific subjects for environmental studies majors. (F,W,S)

197A-B-C. Senior Thesis

(1-2-3) Staff

Prerequisites: all of the lower-division requirements should be met before starting the senior thesis or the instructor's consent must be obtained. Required of all environmental studies majors. Environmental Studies 197A-B-C must be taken consecutively.

A: Class members will develop a thesis topic, outline, basic bibliography, and secure an adviser during this segment.

B: Class members will develop a complete data base (bibliography, research, field work, etc.), and refine the thesis topic during this segment.

C: Class members will write and present their thesis during this final segment.

(F,W,S,SS)

199. Independent Investigation in Environmental Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in environmental studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Open only to students majoring in environmental studies who are approved by the committee chair. No more than four units may be counted toward the major.

Directed research in the characteristics and problems of the environment. (F,W,SS,)

Film Studies

Film Studies Program, Ellison Hall 1710; Telephone (805) 961-2347. Program Chair: Naomi Greene.

Faculty

Charles C. Wolfe, Ph.D., Columbia University, Assistant Professor (*film history and criticism*)

Advisory Committee

Manthia Diawara, Ph.D. (Black Studies/French)
Victor Fuentes, Ph.D. (Spanish)
Naomi Greene, Ph.D. (French)
Harry Lawton, M.A., B. Litt. (Italian)
Laurence A. Rickels, Ph.D. (German)
Frank W. D. Ries, Ph.D. (Dance)
Garrett Stewart, Ph.D. (English)
Charles C. Wolfe, Ph.D. (Film Studies)

Devoted to the study of film as a humanistic discipline, the multi-departmental film studies program at UCSB has as its primary emphasis film history, film theory, and film analysis. In addition to requirements for the major, a wide variety of electives is also offered, ranging from courses in national cinemas and important directors and genres to seminars on special topics. Production

is not emphasized, but all majors become familiar with the basic tools of filmmaking. Interested students may also take courses in screenwriting and advanced film production.

Requirements for the film studies major are flexible and can be structured to meet the student's interests. In consultation with a faculty adviser, the student may develop an individual program centered around special interests and goals. Students who wish to know more about the film studies major are invited to make an appointment in the film studies office to talk with an adviser. A department publication, *A Guide to Film Studies at UCSB*, is available from the program office.

The film studies major is designed to prepare students for graduate study in film and related fields, and for careers in teaching, library science, and certain government positions, as well as such related areas as publishing and television.

After completing specific prerequisites, students with a bachelor's degree in film studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Bachelor of Arts — Film Studies

Preparation for the major. Required: Film Studies 46; Dramatic Art 60; History 4C; Music 15; Art History 6C. Upper-division substitutions for these courses may be requested by petition and must be approved by a film studies adviser.

Upper-division major. Required: Forty-eight upper-division units including (1) Film Studies 101A-B-C, 105, 146, and 192 and (2) twenty-four additional upper-division units chosen from the following, with at least four units each from a, b, and c.

- a. Seminars and Advanced Topics: Film Studies 187AA-ZZ (may be repeated), 189AA-ZZ (may be repeated), 191, 193, 194 (may be repeated), 196.
- b. National Cinemas: Black Studies 171; Film Studies 120, 123, 132, 133, 136, 137, 138; French 178X-Y-Z; German 136, 160D, 180Z; Italian 180Y-Z; Japanese 150; Portuguese 128; Scandinavian 140; Spanish 126, 127.
- c. Film and Social Issues: Black Studies 170, 172; Film Studies 125A-B, 163, 165; French 187X, 191X.
- d. Other Electives: American Cinema — Film Studies 110, 151A-B-C-D. Directors — Film Studies 155AA-ZZ. Genre — Film Studies 128, 130, 140, 142, 143, 147, 159, 170, 175, 180. Screenwriting — Film Studies 188A-B.

Honors Program

The honors program in film studies provides the opportunity for qualified majors to undertake advanced film research or creative work. Through successful performance in the honors program a student may achieve the degree award of Distinction in the Major.

Majors with a minimum cumulative grade-point average of 3.3 who have completed two quarters of their junior year will be invited by film studies faculty to apply for admission to the honors program. The application must include the following: (1) a detailed prospectus of the honors project, (2) a statement of sponsorship from the faculty member who will supervise and evaluate the project, and (3) letters of recommendation from two faculty members familiar with the student's work, one of whom may be the sponsor. Applications are due by May 15 for admission to the program in the next quarter. Applications are considered

by the film studies faculty and their decision is announced by June 15.

The project is to be a research or critical essay of not fewer than 40 pages or a comparable project in the form of a screenplay or film. The program is comprised of two related courses (four credits each) to be taken in two quarters of the senior year. These may not be taken concurrently. The first course is Independent Studies (Film Studies 199), which must be taken for a grade and will not count as a film studies elective. During the course the student, guided by the sponsoring faculty member, completes the required research and submits for formal evaluation a draft of the essay or creative work. The second course is a senior honors seminar (Film Studies 196) during which the student completes the honors project; this course may be used as a film studies elective. At the end of the second course, the student will submit the project to be reviewed by the film studies faculty. Exceptional theses will be published in abridged form in the film studies journal, *Focus*.

Offerings in Film Studies Grouped by Subject Matter

I. Lower-Division

- 46. Introduction to Motion Pictures
- 46MS. Major Seminar
- 99. Independent Studies

II. Film Production

- 102. Acting and Directing Workshop
- 104. Film Technology
- 105. Beginning Film Production
- 106A-B. Intermediate Film Production
- 107. Introduction to Animation
- 188A. Basic Screenwriting
- 188B. Advanced Screenwriting

III. History

- 101A. History of Cinema:
The Silent Film
- 101B. History of Cinema:
The Advent of Sound Film
- 101C. History of Cinema:
Neo-Realism and After
- 110. The Social and Artistic
Importance of the Hollywood Studio

IV. Period Cinema

- 151A. American Film: The 1930s
- 151B. American Film: The 1940s
- 151C. American Film: The 1950s
- 151D. American Film: The 1960s

V. National Cinemas

- 120. Styles of Japanese Cinema
- 123. German Cinema
- 132. French New Wave Cinema
- 133. Soviet Cinema, 1917-1945
- 136. British Cinema
- 137. Eastern European Cinema
- 138. Swiss Film

VI. Directors

- 155AA-ZZ. Directors

VII. Documentary/Social Reality

- 125A-B. Documentary Film
- 134F. Film and Culture of the 1960s
- 165. Film and Social Reality

VIII. Genre

- 128. The Silent Comedy Tradition
- 130. The Comedy Tradition
- 140. The Western
- 142. The War Film:
History and Meaning
- 143. Science Fiction/Science Fantasy
- 147. The Thriller
- 159. Heroes and Heroines in the
Hollywood Film
- 170. The Musical Film

- 175. Experimental Film
- 180. Film Noir

IX. Analysis

- 146. Aesthetics of Film
- 163. Women and Film:
Feminist Perspectives
- 187AA-ZZ. Special Topics in
Film Analysis
- 193. Film Narrative:
Examples and Theory

X. Theory and Criticism

- 189AA-ZZ. Topics in Contemporary
Film Theory
- 191. Film Criticism
- 192. Film Theory

XI. Advanced Studies

- 194. Advanced Readings
- 196. Senior Honors Seminar
- 199. Independent Studies

FILM STUDIES COURSES

A list of film courses with descriptions will be posted outside the film studies office before the beginning of each new quarter, as close to the start of registration as possible. Students are urged to consult this list before registering.

LOWER DIVISION

46. Introduction to Motion Pictures

(4) Staff

Prerequisite: film studies majors must enroll concurrently in Film Studies 46MS.

An introduction to the study of film as an aesthetic and social phenomenon, and to various methods of critical analysis. (F,W,S)

46MS. Major Seminar

(2) Staff

Prerequisites: concurrent enrollment in Film Studies 46 and consent of instructor.

Designed for film studies majors and students contemplating a major or concentration in film. An intensive introduction to the study of film and to various methods of critical analysis.

99. Independent Studies

(1-4) Staff

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department. May be repeated for credit to a maximum of eight units. No unit credit allowed toward the major.
Selected research under the direction of a faculty member.

UPPER DIVISION

101A. History of Cinema: The Silent Film

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor.

International film history from the camera obscura to the close of the silent era in the late 1920s. Historical accounts of film as an aesthetic form, a social force, an economic institution, and a technology will be considered. (F)

101B. History of Cinema: The Advent of Sound Film

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor.

International film history from the advent of talkies to World War II. Historical accounts of film as

an aesthetic form, a social force, an economic institution, and a technology will be considered (W)

101C. History of Cinema: Neorealism and After

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor.

International film history since 1945. Historical accounts of film as an aesthetic form, a social force, an economic institution, and a technology will be considered. (S)

102. Acting and Directing Workshop

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Designed as an introduction to the fundamentals and interaction of acting and directing in the creative process of producing a film or video. Every student will write, perform in, direct, and record on video a short work.

104. Film Technology

(4) Staff

Prerequisite: Film Studies 46.

This is not a filmmaking class.

An introduction to the technology, equipment and materials of filmmaking from Edison to computer graphics. Special attention to the historical breakthroughs that have influenced cinematic trends and directions.

105. Beginning Film Production

(4) Staff

Prerequisites: Film Studies 46, Film Studies majors only, consent of instructor.

An introduction to filmmaking. Basics of camera, lighting, editing, and sound using the super-8 format.

106A-B. Intermediate Film Production

(4-4) Staff

Prerequisites: Film Studies 105; consent of instructor.

Instruction in the basic techniques of 16mm filmmaking via the production of crew projects over two consecutive quarters.

A: Preproduction through principle photography;
B: Postproduction through composite print.

107. Introduction to Animation

(4) Staff

Prerequisite: Film Studies 46 or six terms of college work.

A look at the techniques and history of animation with emphasis on the major styles and methods of production, including cel, direct, photo, three-dimensional, and computer. Close examination of significant films combined with production of a 16mm class project.

110. The Social and Artistic Importance of the Hollywood Studio

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

The effects of studio domination on American cinema and the ethos of the nation from the thirties to the sixties. Developing trends in film content, star values, and censorship surveyed with particular attention to the massive influences of studio heads.

120. Styles of Japanese Cinema

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work.

An introductory scrutiny of major Japanese directors: Mizoguchi, Ozu, Oshima, and Kurosawa. Close attention to their film composition, choices of subject and character, their ideas of the cinematic, and the relationship of cinema to Japanese culture and society.

123. German Cinema

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor.

The rise and fall of German cinema from 1914 to 1934, then its revival in the 1960s as the New German Cinema. Expressionism in silent film. Analysis of films by Lang, Murnau, Pabst, Weine, Wenders, Herzog, Fassbinder, etc.

125A-B. Documentary Film

(4-4)

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work.

A: The history of documentary film, as an aesthetic form and a social force, from the early silent era to World War II.

B: The history of documentary film, as an aesthetic form and social force, from World War II to the present.

128. The Silent Comedy Tradition

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

The study of silent film comedy emphasizing the work of Charlie Chaplin and Buster Keaton, as well as some of their contemporaries (such as Harry Langdon and Harold Lloyd).

130. The Comedy Tradition

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

An analysis of the comic tradition in American cinema using structural and historical approaches. Basic comic-dramatic patterns, theatrical sources, historical/social contexts. Some directors to be covered are: Lubitsch, Hawks, Capra, and Cukor.

132. French New Wave Cinema

(4) Staff

Prerequisite: Film Studies 46.

A study of the French New Wave as both an economic and aesthetic phenomenon, examining characteristic films and critical texts of the late fifties and sixties by Jean-Luc Godard, Jacques Rivette, Alain Resnais, Francois Truffaut, and Claude Chabrol, among others.

133. Soviet Cinema, 1917 to 1945

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A study of the development of cinema in Russia from the revolution to the end of WW II, with some emphasis on the relation of theory and practice and the influence of politics on art.

134F. Film and Culture of the 1960s

(4) Staff

Prerequisite: upper-division standing or one prior course in sociology. This course is the same as Sociology 134F.

Examines prevailing currents of film and related cultural practices during the sixties. Focuses on world cinema as well as the social and political context from which it arose. Emphasis is American, but national concerns are situated within an international framework.

136. British Cinema

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Course will consider a selection of films representing the evolution of British cinema during the past half century.



Technician Val Kalupa works in a small sound studio in Kerr Learning Resources Center, also used by music and film studies students to produce performance tapes and sound tracks.

137. Eastern European Cinema

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Focuses on cinemas of Hungary, Czechoslovakia, and Poland from their relatively modest pre-war beginnings through the post-war period of economic and political "socialization" up to the peak production of the sixties, in context of cultural and historical continuities.

138. Swiss Film

(4) Greene

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work.

Concentrating on directors such as Tanner and Goretta, the course would show how certain themes (claustrophobia, alienation) correspond to national issues and problems.

140. The Western

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Establishes the forms and rituals of the western genre, and reflects on changes they have undergone. Attention will also be given to the trend towards realism, and the new moral and political revisions of the western's view of society.

142. The War Film: History and Memory

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A study of films depicting and/or discussing warfare from World War I to Vietnam. Special emphasis on the relationship between the periods in which the films were made and the manner in which the wars were depicted.

143. Science Fiction, Science Fantasy

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Study of techniques, psychology, and metaphysics of science fiction film from the turn of the century through important experiments in the twenties and thirties to its paranoid heyday in the fifties and its current major renaissance in the seventies.

146. Aesthetics of Film

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A study of the basic formal dimensions of cinema: space, time, motion, sound.

147. The Thriller

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Study of the genre from the gangster to the science-fiction thriller, involving primarily American films but with a look at the parallel international cinema. Course centers on detection and investigation, exploring suspense and other intense forms of spectator involvement.

151A. American Film: The 1930s

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A survey of American film in the 1930s with stress on major directors and genres.

151B. American Film: The 1940s

(4) Staff

Prerequisites: Film Studies 46 or consent of instructor or six terms of college work.

A survey of American film in the 1940s with stress on major directors and genres.

151C. American Film: The 1950s

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A survey of American film in the 1950s with stress on major directors and genres.

151D. American Film: The 1960s

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

A survey of American film in the 1960s with stress on major directors and genres.

155AA-ZZ. Directors

(4) Staff

Prerequisite: Film Studies 46. Course may be repeated an unlimited number of times, provided the letter designations are different; eight units may be counted toward the film studies major.

A study in depth of the films of one or two filmmakers of international stature and significance.

159. Heroes and Heroines in the Hollywood Film

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work.

An examination of film acting and the role and function of the star as seen in a number of significant Hollywood films of different genres and from different eras.

163. Women and Film: Feminist Perspectives

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Survey of the major debates on questions of women and representation in contemporary film criticism. Topics to be covered include the representation of sexuality and the family in the Hollywood cinema; feminism and the avant-garde.

165. Film and Social Reality

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor.

An inquiry into the problems of political artmaking in the realm of cinema with particular emphasis on the narrating and/or reconstructing of public or historical events for fictional or documentary forms. Eisenstein, Vertov, Godard, Makavejev, Marker, Watkins, Newsreel, etc.

170. The Musical Film

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work.

Examination of musical films from the advent of talkies to the present, with special attention given to formal issues: the relationship of musical spectacle to narrative, conditions of musical film spectatorship, musical utopias as constructed in film space and time.

175. Experimental Film

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work.

A survey of the experimental film tracing the major stylistic and thematic trends in the diverse movements that have considered themselves outside of the commercial narrative cinema. Bunuel, Dulac, Cocteau, Leger, Deren, Brakhage, Baillie, Frampton, Snow, Rainer, and others.

180. Film Noir

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

Study of the conventional themes, structures, and visual motifs of the detective film. American films of the forties and fifties and contemporary American and European works will be considered.

187AA-ZZ. Special Topics in Film Analysis

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work. Course may be repeated for a maximum of 12 units; eight units may be counted toward the film studies major.

This seminar for advanced students will examine in depth a particular problem or issue in the analysis of film and its consequences for a history, theory, or aesthetics of film.

188A. Basic Screenwriting

(4) Staff

Prerequisites: consent of instructor, writing sample, upper-division standing.

A study of the creativity and the technique of screenwriting for the conventional narrative film and for TV. Students will be required to complete writing exercises, a treatment, and master scenes of a full-length project. (F,W)

188B. Advanced Screenwriting

(4) Staff

Prerequisite: Film Studies 188A. May be repeated for credit to a maximum of eight units.

A course intended for students who have successfully completed Film Studies 188A and have a full-length screenplay in process which they want to complete. (W)

189AA-ZZ. Topics in Contemporary Film Theory

(4) Staff

Prerequisites: Film Studies 146 and 192, or consent of instructor, or upper-division standing. May be repeated for credit to a maximum of 12 units with eight units allowed toward the major.

Topics vary each year and may include such problems as the relation of film to structuralism, semiotics, metaphor/metonymy, point of view, and the writings of Burch, Barthes, Metz, Heath, Bordwell, Willemen, Wollen.

191. Film Criticism

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor.

An intensive study in the reading and writing of film criticism. A close examination of critical texts from different periods is accompanied by the screening of relevant films; further emphasis is given to analyzing critical papers written for the seminar.

192. Film Theory

(4) Staff

Prerequisite: Film Studies 146 or consent of instructor or six terms of college work.

An introduction to film theory and critical methodology through a close analysis of selected writings of Eisenstein and Bazin, accompanied by Soviet montage and neo-realist films. Other theorists: Arnheim, Balazs, Kracauer, Munsterberg, Mitry.

193. Film Narrative: Examples and Theory

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or upper-division standing.

An investigation of major aesthetic and theoretical problems concerning film narrative. Covered will be the classic film, the breakdown of classical conventions, and the modernistic film.

194. Advanced Readings

(4) Staff

Prerequisite: Film Studies 46 or consent of instructor or six terms of college work. May be repeated for credit to a maximum of 12 units.

This seminar will cover advanced readings in specific film genres, directors, or historical periods.

196. Senior Honors Seminar

(4) Staff

Prerequisite: admission to senior honors program (see requirements under Film Studies Honors Program). A one-quarter directed study, to be conducted as outlined in the description of the senior honors program. Honors candidates will write a senior thesis on a topic approved by the film studies faculty.**199. Independent Studies**

(1-4) Staff

*Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in film studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.**Departmental and instructor approval required.* Selected research under the direction of a faculty member.

French and Italian

Department of French and Italian, Phelps Hall 5206; Telephone (805) 961-3111. Department Chair: William J. Ashby.

Faculty

William J. Ashby, Ph.D., University of Michigan, Professor (*Romance philology, linguistics*)
 Robert Beachboard, Docteur de l'Université de Paris, Professor Emeritus
 Alfredo A. Bonadeo, Ph.D., UC Berkeley, Professor (*renaissance literature, Machiavelli*)
 Cynthia Brown, Ph.D., UC Berkeley, Associate Professor (*late medieval-early renaissance literature*)
 Anne G. Cushing, Ph.D., University of Colorado, Professor (*19th- and 20th-century French poetry, Apollinaire, comparative literature*)
 Geneviève Delattre, Ph.D., Columbia University, Professor Emerita
 Manthia Diawara, Ph.D., Indiana University, Assistant Professor, (*French and African film, Francophone literature*)
 Naomi Greene, Ph.D., New York University, Professor (*20th-century literature, film, Artaud*)
 Harry Lawton, M.A., B. Litt., Oxford University, Senior Lecturer with Security of Employment (*modern Italian poetry, Italian cinema*)
 André Malécot, Ph.D., University of Pennsylvania, Professor (*phonetics, linguistics*)
 Edmond E. Masson, Ph.D., UC Berkeley, Professor Emeritus

Jack Murray, Ph.D., Yale University, Professor
(*20th-century literature, Proust*)
Catherine Nesci, Ph.D., University of Paris,
Assistant Professor (*19th-century literature,
Balzac, theory*)
Patrizio Rossi, Ph.D., UC Berkeley, Professor
(*modern Italian literature, film*)
Jacqueline Simons, Diplôme d'Etudes
Supérieures, Lecturer with Security of
Employment (*supervisor of teaching
assistants*)
Ernest Sturm, LL.B., New York University
School of Law, Ph.D., Columbia University,
Professor (*literature and philosophy*)
Mark J. Temmer, Ph.D., Yale University,
Professor (*18th-century French literature,
Rousseau*)
Ronald W. Tobin, Ph.D., Princeton University,
Professor (*17th-century French theatre,
Molière*)
Philip D. Walker, Ph.D., Yale University,
Professor (*19th-century French literature,
Zola*)

The Department of French and Italian offers majors leading to the Bachelor of Arts degree in French or Italian, and graduate programs leading to the M.A. and Ph.D. degrees in French literature, or an M.A. combining French literature and linguistics. It also collaborates with other departments in the Comparative Literature Program, the Film Studies Program, the Medieval Studies Program, and the Renaissance Studies Program. The majors in French and Italian are liberal arts majors designed, above all, for those who wish to receive solid training in a humanistic discipline. In addition, the Department of French and Italian makes available to all students courses in French and Italian literature, including courses in English translation.

The French program has an undergraduate adviser and a graduate adviser; the Italian program has an undergraduate adviser. Several publications are available from the department describing more completely the French and Italian majors.

After completing specific prerequisites, students with a bachelor's degree in French or Italian are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Language program. The department offers a variety of foreign language courses, including a "four skill" track and conversation. Information about the language program, including grading regulations and placement, is available from the department.

Students who have studied French or Italian in high school and who wish to continue study of those languages at UCSB are required to take a placement examination.

UNDERGRADUATE PROGRAM

Bachelor of Arts — French

Preparation for the major. Required. French 1, 2, 3, 4, 5, 6; French 26. History 4A-B-C and Philosophy 20A-B-C are strongly recommended for all French majors; Linguistics 20, 175, or other upper-division linguistics courses are recommended for those wishing to pursue the French linguistics option. French majors must maintain at least an average grade of C in French courses taken prior to the junior year; transfer students may be tested by examination.

Upper-division major. Forty-four upper-division units in French, including (1) four units from French 101; (2) eight units of upper-division literature courses taught in French from each of the

following periods: medieval or renaissance, seventeenth or eighteenth century, nineteenth or twentieth century; and (3) 16 units from other upper-division French courses. At least one, *but sometimes only one*, course from each period will be offered every quarter. Students are encouraged to plan their schedules accordingly. A maximum of eight units each of upper-division courses in Italian or courses taught in English may be applied to these major elective units.

Linguistics and literature option. French majors interested in French linguistics and literature may elect to complete the following upper-division program in place of the upper-division requirements above. Students who select this option should note that their transcripts and diplomas will not acknowledge completion of the option; the major will be listed as "French."

The linguistics and literature option requires 44 upper-division units in French, including French 101, 102, 103A-B, 105A-B, and one upper-division literature course taught in French in each of the following three periods; medieval or renaissance; seventeenth or eighteenth century; nineteenth or twentieth century. The remaining eight elective units may be selected from any additional upper-division courses in the Department of French. A maximum of eight units each of upper-division courses in Italian or courses taught in English may be applied to these major elective units.

Education Abroad Program requirements. Majors who go to France under the Education Abroad Program must complete at least 18 units of upper-division courses in the department on the UCSB campus. Full details regarding EAP courses and regulations are available from the EAP office or the department chair.

Bachelor of Arts — Italian

Preparation for the major. Italian 1, 2, 3, 4, 5, 6 (or Italian 14); Italian 25. History 4A-B-C and Philosophy 20A-B-C (when offered) or 21A-B-C are strongly recommended.

Upper-division major. Forty upper-division units in Italian are required, of which 12 must come from Italian 110A-B-C (Dante: *La Divina Commedia*) and 28 units from all other upper-division courses in the Department of Italian. Eight units of upper-division courses taught in French or English may be substituted.

Senior Honors Program

French or Italian majors of senior standing may be invited to participate in the departmental honors program. Details are available from the department office.

GRADUATE PROGRAM

Summer Institute of French Language and Culture

A three-summer intensive program leading to the M.A. degree is designed primarily for secondary school teachers of French. Since it is not a research-oriented degree, the Summer Institute M.A. will not completely fulfill requirements for entry into the Ph.D. program at UCSB. Residence at the institute and observance of a "no English" rule are required.

Prerequisites. In addition to fulfilling the general requirements for admission to graduate status, the student must have an undergraduate major in French or its equivalent and must demonstrate proficiency in speaking and writing French.

Course work. The M.A. requires 40 units (no thesis) distributed as follows: (1) Group A, Language: French 210, 214, 215, and two courses

from French 211, 212, 213. (2) Group B, Contemporary French Culture: French 251, 252, 253, 254, 255.

Courses 251 and 255 may be repeated once with a different topic as a substitute for one course in Group A if the student demonstrates a high proficiency in relevant language skills. (Students may petition to transfer up to eight units of appropriate work in French taken while in an accredited graduate program.)

Recommended preliminary readings.

Students can do the reading for most Group B courses during the winter; lists appear in the winter bulletin, published in the fall and available upon request.

For information and application forms, write Summer Sessions Office, University of California, Santa Barbara, CA 93106.

Master of Arts — French

Admission

Applicants must hold a bachelor's degree or its equivalent from an accredited institution. The overall grade-point average for upper-division work must be strong, and in French it must be excellent. In addition to fulfilling the general requirements for admission to graduate status, the student must have an undergraduate major in French, or its equivalent. Students who are deficient in this respect will take the necessary undergraduate courses before beginning work in the master's program.

Degree Requirements

The M.A. degree is offered under Plan 1 (thesis) and Plan 2 (comprehensive examination). In Plan 1, the candidate is expected to take 44 units of work, 36 units of course work and 8 units of thesis work. All 36 units must be in graduate courses. In Plan 2, the candidate is expected to take 44 units of course work, all of which must be in graduate courses. All full-time graduate students must enroll in at least two regularly scheduled graduate seminars in French each quarter.

All candidates must satisfy the following requirements: a knowledge of French phonetics equivalent to French 103A-B; a knowledge of French philology equivalent to French 204A-B; a reading knowledge of one additional relevant foreign language. A background in Latin equivalent to a one-year college course is recommended prior to French 204A-B.

All candidates must (1) pass a written comprehensive examination and an oral examination; (2) demonstrate a proficiency in speaking and writing French; and (3) serve as teaching assistants for two quarters. Full details of the M.A. program, including options for the comprehensive examinations and descriptions of examinations, are available from the department.

Doctor of Philosophy — French

Admission

An M.A. degree in French from UCSB, or a degree based on equivalent training, is prerequisite for admission.

Degree Requirements

Ph.D. students in the Department of French take those courses recommended by their advisers as useful in preparing for the comprehensive examination. All full-time graduate students must enroll in at least two regularly scheduled graduate seminars in French each quarter. They must also satisfy the requirement of a reading knowledge of two relevant foreign languages, and they must serve as teaching assistants for three quarters.

All students must pass a series of written comprehensive examinations; the examinations may be written in French or English. Students who successfully pass the written comprehensives must pass a qualifying oral examination in order to advance to candidacy. Following formal advancement to candidacy, the student must present a dissertation which gives evidence of ability to conduct independent research of high quality.

Full details of the Ph.D. program, including options for the comprehensive examinations and examination schedules, are available from the department.

FRENCH COURSES

LOWER DIVISION

Please note: Students who have studied French at other institutions and who wish to continue the study of these languages at UCSB are required to take the placement examinations given by the department.

1. Elementary French

(4) Staff

The beginning course in French. Course taught in French. Oral skills stressed. Grammar reinforced by dialogue memorization and pattern drills. Correct pronunciation and the ability to distinguish sounds emphasized. Question-answer technique helps students transfer patterns to free conversation. Laboratory assignment given daily. Not taught in spring quarter. (F,W)

2. Elementary French

(4) Staff

Prerequisite: French 1 or equivalent.

A continuation of French 1. Course taught in French. Readings, essays, French geography included, the latter by means of slides. Laboratory assignment given daily. (F,W,S)

3. Elementary French

(4) Staff

Prerequisite: French 2 or equivalent.

A continuation of French 2. Course taught in French. Emphasis on readings and short essays rather than on dialogues. Slide programs given to encourage class discussion. Laboratory assignment given daily. (F,W,S)

4. Intermediate French

(4) Staff

Prerequisite: French 3 or equivalent.

Taught in French, the course reviews basic structures with new elements added. Vocabulary development stressed by means of original sentences and weekly essays. Reading selections to help develop oral-written correspondences included in the course. Laboratory assignment given daily. (F,W,S)

5. Intermediate French

(4) Staff

Prerequisite: French 4 or equivalent.

A continuation of French 4. Course taught in French. Basic structures reviewed. Supplemental readings such as *L'Étranger*, *Huis Clos*, etc., are emphasized. Laboratory assignment given daily. (F,W,S)

6. Intermediate French

(4) Staff

Prerequisite: French 5 or equivalent.

A basic text, used for the acquisition of vocabulary and the practice of essay writing, also stresses aspects of civilization and is complemented by readings of poems, plays, or novels. (F,W,S)

8A. French Conversation

(2) Staff

Prerequisite: French 3 or equivalent.

Brief exposés are based on centers of vocabulary which have been studied. Debates and discussion on topics given by the instructor are held between the students.

(F,W,S)

8B. French Conversation

(2) Staff

Prerequisite: French 4 or equivalent.

Brief exposés are based on centers of vocabulary which have been studied. Debates and discussion topics given by the instructor are held between students. (F,W,S)

8C. French Conversation

(2) Staff

Prerequisite: French 5 or equivalent.

This course, because of the abilities of the students, varies more in content than does French 8A or 8B. Discussion of relevant topics is carried on, while fluency and vocabulary enrichment are definitely emphasized. (F,W,S)

11A-B. French for Graduate Students

(4-4) Staff

Prerequisite: French 11A for French 11B.

A service course for graduate students from other departments who need to satisfy language requirements. Divided into two levels: 11A (Elementary) for those who have no, or hardly any knowledge of French; 11B (Intermediate) open to students who have an appropriate level of knowledge of the language and to continuing students from 11A. Class meets twice weekly, offers grammatical preparation and practice for translation, but no individual projects.

19A-B-C. Intensive Practice in Spoken French

(4-4-4) Staff

Prerequisite: French 6 or 8C or equivalent.

An intensive encounter with spoken French designed to develop communication skills. Systematic assimilation of oral structures through the study of film, soundtracks, and tapes. Exercises in oral expression. Active expansion of vocabulary and means of expression.

26. French Composition

(4) Staff

Prerequisites: French 1 through 6; French 26 to be a prerequisite for upper-division linguistics.

Primarily designed to help students develop a writing skill in the French language. French grammar is reviewed, but the coverage of this subject is limited to concrete situations arising from student's own compositions. Especially difficult grammatical topics are discussed upon students' request. (F,W,S)

UPPER DIVISION

Please note: French 26 and 101 (or consent of the department) are prerequisite to all upper-division literature courses taught in French; French 26 is the prerequisite for upper-division linguistics courses.

French majors should note that no more than eight units of French courses taught in English may be counted toward the major.

101. Advanced Composition and Literary Analysis

(4) Staff

Prerequisite: French 26 or equivalent

Training in analysis of literary texts by French critical techniques and in writing compositions. (F,W,S)

102. Background of Modern French

(4) Ashby

The origins of the French language and an overview of its linguistic development with emphasis on the historical and cultural background. Lectures and readings in French.

103A-B. Phonetics

(4-4) Malécot

Prerequisite: French 103A is prerequisite to 103B.

Basic concepts of articulatory phonetics, and a detailed analysis of the conversational style of the Parisian professional class. Practice with recorded models in the language laboratory. Lectures and readings in French.

103C. Poetic Diction

(4) Malécot

Prerequisite: French 103B.

A detailed analysis of the phonetic differences between conversational style and poetic diction. Practice in the application of these principles to the recitation of representative French poems from the Middle Ages to the present.

104A-B. Advanced Writing and Translation

(4-4) Staff

The course will first focus on a study of literary and nonliterary discourses, with a sustained emphasis on translation. The course will then focus on creative writing in fictional and nonfictional prose. Lectures and readings in French.

105A. French Morphology

(4) Malécot

An analysis of the morphology of modern French.

105B. French Syntax

(4) Ashby

An analysis of the syntax of modern French.

105C. Problems in French Linguistics

(4) Ashby

Prerequisites: French 105A-B suggested but not required. May be repeated with different topics for a maximum of 12 units.

A few selected problems in the linguistic analysis of French will be studied in depth. The specialized focus will change from year to year. Lectures and readings in French.

106A-B-C. History of French Culture

(4-4-4) Duval, Walker

Lectures and readings in French.

A: From the Romanization of Gaul to the intellectual, artistic, and musical creations of four major periods: Carolingian, Romanesque, Gothic, and Renaissance.

B: Important social changes and main artistic creations during the seventeenth, eighteenth, and nineteenth centuries.

C: Contemporary French culture, particularly during the period since World War II.

106X. Women in France: Images and Realities (in English)

(4) Brown, Green

Prerequisites: English 2A-B.

The comparison and contrast of the image of women in the arts and literature with their traditional position in French society from the Middle Ages to the present. Representative figures include Eleanor of Aquitaine, George Sand, and Simone de Beauvoir. Lectures and readings in English.

136A. Medieval Narrative

(4) Brown

The rise of medieval narrative literature and its development. Emphasis will be placed on the *chanson de geste* and/or the romance. Lectures and readings in French.

136B. Lyric Poetry of the Middle Ages

(4) Brown
Four centuries of French poetry, from the earliest songs of the *troubadours* and *trouvères* to the verse of Villon. Thematic and stylistic analyses of selected texts from courtly and popular traditions. Lectures and readings in French.

136C. Medieval Drama

(4) Brown
A study of the origins and development of French theatre to 1500 with emphasis on the comic genres. Lectures and readings in French.

136D. Trends in Medieval Literature and Culture

(4) Brown
The development of a cultural or literary idea, theme, or structure (i.e., allegory, autobiography, madness, women as writers, and poetic subjects) from the twelfth century through the fifteenth century. Lectures and readings in French.

137X. Medieval Literature in Translation

(4) Brown
Prerequisites: English 2A-B.
A study of one or more major medieval works in translation such as *The Song of Roland*, the romances of Chrétien de Troyes, the *Lais* of Marie de France, or *The Romance of the Rose*. Lectures and readings in English

140A. Rabelais

(4) Staff
A detailed study of *Gargantua* and *Pantagruel* in the contexts of popular culture; the biblical, classical, and scholastic heritage; the intellectual avant-garde of Humanism. Lectures and readings in French.

140B. Renaissance Poetry

(4) Staff
A study of the great masterpieces of French Renaissance poetry with special attention given to poets of the "École de Lyon" and the "Pléiade." Works by Marot, Scève, Du Bellay, and Ronsard. Lectures and readings in French.

140C. The Renaissance Literature of Ideas

(4) Staff
The expression, transformation, and transcendence of ideas through new literary forms of the late Renaissance. Philosophical, political, and religious works by Montaigne, Ronsard, and d'Aubigné. Lectures and readings in French.

141X. Rabelais in Translation

(4) Staff
Prerequisites: English 2A-B.
A study of the works of Rabelais in an attempt to discover in them the expression of a popular culture parallel to official literary culture but most often excluded from officially recognized literature. Lectures and readings in English.

149. Poetry and Music of the French Renaissance

(4) Staff
Prerequisites: open to music majors with reading knowledge of French; consent of the instructors. May be taken for credit only once as either French 149 or Music 189.
Interdisciplinary study in the relationship between text and music in the Renaissance *chanson*. Works studied include poetry of Marot, Ronsard, Baïf; music of Josquin, Claudin, Lassus.

150A. The Early Seventeenth Century

(4) Tobin
Analysis of literary, philosophical, and cultural trends of the first half of the seventeenth century.

Esthetics of mannerism (Theophile, Saint-Amant), classicism (Malherbe, Racan), Preciosité (Voiture, Montausier), French mannerist tragedy (Rotrou, Corneille). Birth of modern rationalism and importance of Neo-Stoicism in Descartes' works. Class reading and discussions supplemented by lectures on aspects of culture (religion, politics, society). Documentary films used. Lectures and readings in French.

150B. The Age of Louis XIV

(4) Tobin
The development of literary genres between 1660 and 1680. Pascal, Racine, Molière, La Fontaine, La Rochefoucauld, Mme de La Fayette studied as examples of that ideal which attempts a balance, through tension, of mannerism and classicism. Discussions of art and architecture will supplement literary analysis. Lectures and readings in French.

150X. Seventeenth-Century French Literature in Translation

(4) Tobin
Prerequisites: English 2A-B.
Analysis of selected seventeenth-century French texts by such authors as Molière, Racine, Descartes, Pascal, and La Fontaine. Lectures and readings in English.

152. Aspects of the Seventeenth Century

(4) Tobin
May be repeated with a different topic for a maximum of 12 units.
A course whose specialized focus changes from quarter to quarter. Lectures and readings in French.

160. Introduction to Eighteenth-Century French Thought

(4) Sturm
A reading of basic Enlightenment texts, stressing the fundamental works of Rousseau, Voltaire, Diderot, Laclos, and other major figures of the century. Lectures and readings in French.

160X. The Power of Negative Thinking: Sartre, Adorno, and Marcuse

(4) Sturm
Prerequisites: English 2A-B.
Critical perspectives on man and culture by three of the great myth-shattering thinkers of the century. Topics: the social function of art, the Freudian legacy, utopia revisited, work and play, etc. Lectures and readings in English.

161. Rousseau About Himself

(4) Temmer
A detailed reading of the *Confessions* and *Les Rêveries du Promeneur Solitaire*. Discussion and readings in French.

161X. The Utopian Tradition

(4) Sturm
Prerequisites: English 2A-B.
Beginning with utopian thought in the French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyze the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom. Lectures and readings in English.

162. The Pleasures of the Mind: Candide, Jacques Le Fataliste, Le Neveu De Rameau, Lettres Persanes

(4) Temmer
A thematic and stylistic analysis of the wittiest writers of the Enlightenment (Voltaire, Diderot). Discussion and readings in French.

162X. Contrasts in Wit and Satire: Candide and Rasselas

(4) Temmer
Prerequisites: English 2A-B.
The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Samuel Johnson's *Rasselas* will be studied by way of contrast. Lectures and readings in English.

163. Utopia and Revolution

(4) Sturm
Rousseau's two *Discourses* and the *Contrat Social* in terms of content and influence. Readings and discussion in French.

163X. Diderot, Fiction, and Role-Playing

(4) Temmer
Prerequisites: English 2A-B.
A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville*), with the theory and practice of the novel (*Jacques the Fatalist*), with acting on the stage (*Paradox on the Comedian*), with the alienated man (*Rameau's Nephew*). Lectures and readings in English.

164. Literature in the Age of Anxiety

(4) Sturm
Works dramatizing the plight of modern man faced with existential dilemmas and extreme situations. Sartre, Camus, Gide, Beckett, and others. Lectures and readings in French.

164X. Rousseau and the Confessional Urge

(4) Temmer
Prerequisites: English 2A-B.
An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of western civilization. Also to be studied: *The Fifth Rêverie of the Solitary Wanderer*. Lectures and readings in English.

165X. The Myth of Don Juan in Literature and Music

(4) Temmer
Prerequisites: English 2A-B.
The course traces the metamorphoses of the enigmatic figure of Don Juan from his first appearance in *The Trickster of Seville* by Tirso de Molina through the ages — Molière, Mozart, Byron, Shaw, Horvath, Frisch, and Paul Goodman's psychoanalytical study. Lectures and readings in English.

170A. The Nineteenth Century I

(4) Walker
Romanticism to realism. French poetry and prose between 1800 and 1850. Readings of such authors as Chateaubriand, Lamartine, Vigny, Hugo, Musset, Stendhal, Balzac. Chief qualities of the works selected, major themes, images, techniques, kinds of creative activity involved, emergent visions of reality. Lectures and readings in French.

170B. The Nineteenth Century II

(4) Walker
Realism, the Parnasse, the beginnings of modern poetry. French verse and prose of the middle of the nineteenth century. Readings of such authors as Baudelaire, Gautier, Mérimée, Leconte de Lisle, Nerval, Michelet, Flaubert. Lectures and readings in French.

170C. The Nineteenth Century III

(4) Walker
Naturalism, symbolism, decadence, the *fin de siècle*. French poetry and prose from 1870 to 1900. Readings of such authors as Zola, Mallarmé, Verlaine, Corbière, Rimbaud, Laforgue. Lectures and readings in French.

170X. Nineteenth-Century French Literature in Translation

(4) Walker

Prerequisites: English 2A-B.

Readings of selected nineteenth-century French authors such as Hugo, Baudelaire, Mallarmé, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola. Lectures and readings in English.

170Y-Z. The Nineteenth-Century French Novel in Translation

(4-4) Walker

Prerequisites: English 2A-B.

Readings of works of nineteenth-century French novelists. First quarter: Balzac, Stendhal, Hugo, and other writers of the first half of the century. Second quarter: Flaubert, Zola, and other writers of the second half of the century. Principal themes, techniques, varieties of creative activity, relationship with other arts and with society. Lectures and readings in English.

171. The Romantic Movement in France

(4) Staff

A study of French romanticism as expressed in literature, art, and music and in the social and political life of France between 1820 and 1835. Lectures and readings in French.

172X. Literature and the Rise of the Modern World

(4) Walker

Prerequisites: English 2A-B.

A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist, the opportunities that change gives the artist; the artist as world creator. Lectures and readings in English.

173. Balzac

(4) Staff

A study of selected works by one of the world's greatest novelist and one of the chief founders of modern fiction. Lectures and readings in French.

174. Le Roman d'éducation au 19ème siècle

(4) Walker

A study of novels dealing with the theme of the worldly education of a young man or woman. Lectures and readings in French.

174X. Aspects of the French Novel

(4) Murray, Walker

Prerequisites: English 2A-B.

A course whose specialized focus changes from quarter to quarter but in which reading assignments will be limited to major works by major authors, mostly of the nineteenth and twentieth centuries, e.g., Balzac, Stendhal, Flaubert, Zola, Proust, Gide, Camus. Lectures and readings in English.

175. The Romantic Novel

(4) Staff

A study of the novel of the 1830s, its main characteristics as a new emerging literary genre, and its main themes. Representative works by Balzac, Hugo, Sand, Gautier will be analyzed in depth. Lectures and readings in French.

176. Symbolism in the Arts

(4) Cushing

Baudelaire, Mallarmé, Verlaine: their debt to art and music; their poetry as a new point of departure for artists and musicians; their esthetic in an interdisciplinary context. Will use slides and tapes in this course. Lectures and readings in French.

176X. The Symbolist Heritage

(4) Walker, Cushing

Prerequisites: English 2A-B.

A study of key poems and prose texts which throw light on aspects of nineteenth-century symbolism. Lectures and readings in English.

177X. Literature and Religion in Modern France

(4) Walker

Prerequisites: English 2A-B.

Religious aspects of French fiction and poetry since the French Revolution. Readings of selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac. Lectures and readings in English.

178X-Y. French Film: Theory and Practice

(4-4) Greene

Prerequisites: English 2A-B.

A study of the various film movements in France (surrealism, new wave, cinéma vérité, political filmmaking of the 1960s) through the analyses of texts (especially Cocteau, Bazin, the Dziga Vertov group) and films (by Cocteau, Renoir, Godard). Lectures and readings in English.

178Z. French Film: Theory and Practice

(4) Greene

Prerequisites: English 2A-B.

Developments in French cinema from the New Wave to the present. Lectures and readings in English.

179X. Decadence

(4) Murray, Greene

Prerequisites: English 2A-B.

A study of the decadent phenomenon as seen in such writers as Lautréamont, Proust, Gide, Céline, Genet; selections to be based on available translations. The course will be of interest to students in art and music as well as in literature. Lectures and readings in English.

180A. Modern French Literature

(4) Cushing, Murray, Greene

The course will examine literature from the early part of the century. Area to be investigated may include Surrealism and/or Modernism and literary figures such as Proust, Gide, Cocteau.

180B. Modern French Literature

(4) Cushing, Murray, Greene

The course, devoted primarily to the 1930s and 1940s, will examine novelists such as Bernanos, Queneau, Beckett, Céline, and Malraux, dramatists such as Anouilh and Giraudoux, and will discuss writers associated with Existentialism and/or later Surrealism (Prévert, Michaux, Eluard).

180C. Modern French Literature

(4) Cushing, Murray, Greene

This course, devoted to aspects of French poetry, fiction, and film since World War II, may treat modern poets, 'new novelists' (to be chosen among Sarraute, Duras, Robbe-Grillet, Butor), playwrights of the 'absurd', and/or New Wave filmmakers.

180X. Existentialist Literature in Translation

(4) Murray

Prerequisites: English 2A-B.

Readings in fiction, drama, and philosophical essays from the French Existentialist movement. Readings will include Jean-Paul Sartre, Albert Camus, Simone de Beauvoir. The major existentialist themes (commitment, anguish, subjectivity, etc.) will be considered. Lectures and readings in English.

180Y. Proust in Translation

(4) Murray

Prerequisites: English 2A-B.

A close study of several volumes of Marcel Proust's "Remembrance of Things Past." The major Proustian themes — remembrance, jealousy, social commentary, etc. — will be considered, as well as the principal features of Proust's style. Lectures and readings in English.

181. Contemporary French Literature

(4) Staff

From the Writing of Adventure to the Adventure of Writing. A study of contemporary works (Butor, Robbe-Grillet, Blanchot, Beckett, Sollers) and avant-garde movements ("Nouveau Roman," "Tel Quel") that challenge, at various levels, the very notion of "Literature."

182X-Y. The Twentieth-Century French Novel in Translation

(4-4) Cushing

Prerequisites: English 2A-B.

The evolution of contemporary French fiction. X: The influence of Symbolism — Valéry, Gide, Mauriac, and others. Y: The growth of the new novel — Breton, Sartre, Robbe-Grillet, Beckett, and others. Lectures and readings in English for both 182X-Y.

183X. From Existential Phenomenology to Structuralism

(4) Sturm

Prerequisites: English 2A-B.

Intellectual movements in postwar France. Critical readings and discussion in literature, psychoanalysis, art, and systems. Sartre, Lévy-Strauss, Lacan, Barthes, Foucault, and others. Lectures and readings in English.

184A-B. Contemporary French Poetry

(4-4) Cushing

From Baudelaire to Prévert: a critical study of significant poems since 1857, against the background of Parnassian, symbolist, cubist, and surrealist ideas. Study of poetic materials and techniques. Several short papers, *explications de texte*, practice in translation. Lectures and readings in French.

184Y. French Film Directors

(4) Staff

Prerequisites: English 2A-B.

A study of selected works of two or three major French film directors such as René Clair, Robert Bresson, Jean Vigo, Alain Resnais, Claude Chabrol, Max Ophüls, François Truffaut, Jean Cocteau, Jean Renoir, and Eric Rohmer. Lectures and readings in English.

184Z. Key Works of the French Cinema

(4) Staff

Prerequisites: English 2A-B.

A study of eight or so films (each by a different director), each of which is both important and artistically successful in itself and illustrative of a period or a tendency in the history of the French film. Lectures and readings in English.

185. Women in French Literature

(4) Greene

The course will examine the works of several contemporary women writers, including Simone de Beauvoir and Colette. Taught in French.

186. Poets and Painters in Twentieth-Century France

(4) Cushing

A study of the relationships between poets and painters, concentrating on collaborations (illustrated books or *livres de peintres*). The confrontation between verbal and visual images will be a main concern of the course. Guest lecturers from the Art History Department and the library

will discuss aesthetic and technical aspects of the book. Lectures in French.

186X. Beckett and Godard: The Difficulties of Creation

(4) Greene

Prerequisites: English 2A-B.

An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible. Lectures and readings in English.

186Y. Poets and Painters in Twentieth-Century France

(4) Cushing

Prerequisites: English 2A-B.

A study of the relationships between poets and painters, concentrating on collaborations (illustrated books or *livres de peintres*). The confrontation between verbal and visual images will be a main concern of the course. Guest lecturers from the Department of Art History and the library will discuss aesthetic and technical aspects of the book. Lectures and readings in English.

187X. French Cinema of the 1930s

(4) Greene

Prerequisites: English 2A-B.

Themes and development of French cinema from 1930 to the outbreak of World War II. Lectures and readings in English.

187Z. Surrealist Film

(4) Cushing, Greene

Prerequisites: English 2A-B and upper-division standing. Course designed for upper-classmen and graduate students.

A study of the surrealist film of the 1920s and 1930s. Complementary surrealist texts read. Lectures and readings in English.

188. The French Art Song from Symbolism to Surrealism

(4) Cushing and Hsu

Prerequisite: open to music and French majors or by consent of the instructors. May be taken for credit only once as either French 188 or Music 188. French majors please note that no more than eight units of French courses taught in English may be counted toward the major. An interdisciplinary study in text-music relationship from Faure to Poulenc; from Baudelaire to Eluard. Lectures in English, readings in French.

188X. Contemporary French Drama and Film in Translation

(4) Greene

Prerequisites: English 2A-B.

An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd — Beckett, Ionesco, and Genet, as well as such filmmakers as Godard. Lectures and readings in English.

189Y-Z. Personal Documentary: From Vertov to Cinéma Vérité

(4-4) Greene

Prerequisites: English 2A-B.

The concept of film documentary will be studied and films of various directors shown. Among the filmmakers included are Dziga Vertov, Jean Rouch, Chris Marker, Luis Buñuel. Lectures and readings in English.

190X. Cross-Currents in Modern French and Italian Film

(4) Greene

Prerequisites: English 2A-B.

Will study interrelationship of French and Italian film from the 1930s to the present, examining Renoir, Italian, neo-Realism, French New Wave, the theorist André Bazin, at once a great proponent of neo-Realism and spiritual father of the New Wave. Lectures and readings in English.

190Y. European Film Noir

(4) Greene

Prerequisites: English 2A-B.

The relationship of European noir to American noir films and the tough guy fiction that inspired them. Films by Melville, Clement, Chabrol, Godard, Truffaut, Wenders, plus classic American noir films and readings in their sources: Hammett, Cain, Chandler, Irish, and Goodis. Lectures and readings in English.

191X. Contemporary French Film and Culture

(4) Diawara

Prerequisites: English 2A-B.

French cinema since events of May, 1968. Films will be related to post-'68 popular culture. Radicalism, liberalism, and fascism will be examined in such films as *Tout va bien* (1972), *La cage aux folles* (1978), and *Lacombe Lucien* (1974).

192. Littérature de la Francophonie

(4) Diawara

Course deals with literature in French by writers outside France. Material of course includes representative authors and literary movements of Canada, Haiti, Senegal, Zaire, etc. Questions of national identity and literary relations will be discussed. Lectures and readings in French.

199. Independent Studies in French

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in French. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Individual investigations in literary or linguistics fields.

GRADUATE COURSES

203. Advanced French Phonetics

(4) Malécot

An accelerated review of the principles covered in French 103A-B-C, but without laboratory practice. An introduction to acoustic phonetics.

204A. History of French Language

(4) Ashby

Prerequisites: one year of college Latin or equivalent or consent of instructor; French 203 or equivalent.

The linguistic history of French, stressing the major changes in the phonological, morphological, and syntactic systems from Latin to modern French.

204B. Old French Philology

(4) Ashby

Prerequisites: one year of college Latin or equivalent or consent of instructor; French 203 or equivalent and French 204A. Reading and linguistic analysis of old French texts.

205. Bibliography and Research Techniques

(2) Tobin

Open to qualified undergraduates by petition and consent of instructor. Recommended for all graduate students concerned with, or specializing in, French literature.

A brief introduction to bibliographical theory and practice, the principal bibliographies, and other sources of information useful for the study of French literature, and ways of obtaining different types of information having to do with French literature.

208. Studies in French Linguistics

(4) Malécot

May be repeated with different topics for a maximum of 20 units.

Selected problems in linguistics will be studied with a different specialization each quarter.

216. Narratology

(4) Murray

Course taught in English, although knowledge of French is required.

Course will study the structures, modes, and levels of fictional narrative by applying recent analytical methods to selected texts: formalism, structuralism, semiotics, deconstruction, etc. Students will analyze their own story after an analytical model for an oral report and term paper.

232A-B. French Literary Criticism

(4-4) Staff

An examination of the history of French literary criticism and an inquiry into the different approaches employed by contemporary critics such as Gaston Bachelard, Georges Poulet, Maurice Blanchot, Jean-Paul Sartre, Jean-Pierre Richard, Jean Starobinski, Lucien Goldman, and Roland Barthes.

236AA-ZZ. Studies in Medieval Literature

(4) Staff

This course may be repeated provided the letter designation is different.

In-depth study of selected texts of medieval literature. A: Epic. B: Courtly Romance. C: Lyric poetry (troubadours and trouvères). D: *Le Roman de la Rose*. E: Late Medieval Poetry. F: Drama. G: Book of Medieval Literature.

240A-E. Studies in the Sixteenth Century

(4) Staff

This course may be repeated provided the letter designation is different.

A: Rabelais; B: Pléiade; C: Montaigne; D: French Renaissance Theatre; E: Renaissance court poetry. Study in depth of selected texts of the sixteenth century.

250A-H. Studies in the Seventeenth Century

(4) Tobin

This course may be repeated provided the letter designation is different.

Study in depth of selected texts of the seventeenth century. A: Corneille; B: Racine; C: Molière; D: Pascal; E: La Fontaine; F: Moralists; G: Classical Hero; H: The Baroque.

260A-H. Studies in the Eighteenth Century

(4) Sturm, Temmer

This course may be repeated provided the letter designation is different.

Study in depth of selected texts of the eighteenth century. A: Voltaire. B: Diderot. C: Rousseau. E: The Novel. F: Political Thought in Belletristic Literature. G: Utopia in the *Siècle des Lumières*. H: Man against Myth.

261. Rousseau and His Critics

(4) Temmer

A study of Rousseau's major works as a point of departure in a review of past and present critical views.

262. The Confessional Urge: Studies in French Autobiography

(4) Sturm

A critical inquiry into motivation and strategies of the genre. Casanova, Rétif, Rousseau, Leiris, Adamov, Sartre, Barthes, and others in selected texts. Psychoanalytic orientation.

263. Rousseau and the Alienation of Modern Man

(4) Sturm

In condemning the enlightenment notion of progress, Rousseau became the first thinker to anticipate the dehumanized edifice of the modern era. Discussion on his views on politics, art, education, and his extraordinary influence will be considered through Freud and Marcuse.

270A-J. Studies in the Nineteenth Century

(4) Cushing, Walker

This course may be repeated provided the letter designation is different.

Study in depth of selected texts of the nineteenth century. A. Balzac; B. Stendhal; C. Flaubert; D. Zola; E. Romantic Poetry; F. Baudelaire; G. Symbolism; H. Literature of the Second Empire; I. Theater; J. Hugo.

271. Literature and the Visual Arts in France 1830-80

(4) Staff

Concentrates on the problems of representation in period, from Baudelaire and Delacroix to Impressionism. It raises cultural and methodological problems.

272. Structuralist and Post-Structuralist Poetics

(4) Nesci

This course will focus on structuralist and post-structuralist poetics through the study of main concepts such as text, intertextuality, literarity. Special attention will be given to the different theories of sign as developed by Semiotics and interpretative Hermeneutics.

273. Confession and Fiction in the Nineteenth Century

(4) Nesci

Course analyzes a particular kind of novelistic production: *mise en scène* of young man as hero — and antihero — of a first person narrative, through the representation of society and history, the role of language and women in narrative strategies.

274. Representations of the Body in Literature

(4) Staff

Relates representations of the body to scientific, economic, ideological, and cultural developments. Examines health, disease, money, work, sexuality, textuality, and considers possible differences in representation by male or female writers. Texts by Sade, Gautier, Balzac, Michelet, Rachilde, Clément, Cixous, Duras.

280A-M. Studies in the Twentieth Century

(4) Cushing, Greene, Murray

This course may be repeated provided the letter designation is different.

Study in depth of selected texts of the twentieth century. A. Proust; B. Gide; C. Apollinaire; D. Existentialism; F. Theatre; G. Essay; H. Surrealism; I. Valéry; J. Contemporary Criticism; K. Camus; L. Politics and Literature; M. Sartre.

281. Literature and Philosophy in Twentieth-Century Writing

(4) Sturm

Modern perspectives in methodology, psychology, aesthetics, politics, etc. Mainly Sartre and Camus.

282. Marxist Perspectives on French Modernism

(4) Greene

A study of key figures and movements (Baudelaire, Beckett, Surrealism) seen through debates conducted by Marxist philosophers and critics (Adorno, Lukacs, Sartre, Benjamin).

288. Theory and Practice of the "Nouveau Roman"

(4) Greene

Will be devoted to theory and practice of the "nouveau roman." Writers studied will include Robbe-Grillet, Butor, Sarraute, Duras, and Beckett.

289. La Littérature Maudite

(4) Greene

This course will examine the questions of "la littérature maudite" from Sade to the present. Also studied will be Nerval, Lautréamont, Baudelaire, and Genet.

290. Readings in Twentieth Century Alienation

(4) Sturm

The individual at odds with the myths and structures of the modern world, as perceived in his psychological, cultural, and aesthetic dimensions. Selected works by: Sartre, Camus, Beckett, Genet, Foucault, and others.

500. Apprentice Teaching

(4) Simons

Units earned in this course, which is required of all teaching assistants, do not apply toward degree.

Includes orientation week, weekly meetings with supervisor, preparation of examinations, class visitations and discussions, videotaping of classes followed by review with supervisor, occasional workshops.

596. Directed Reading and Research

(2-6) Staff

Students must take a minimum of two units per quarter. This option may be taken only in addition to two regularly scheduled seminars in French in any given quarter. Letter grade given.

Individual tutorial. Instructor usually student's major professor. Students doing initial research on the doctoral dissertation may sign up for this course.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff

No unit credit allowed toward degree. S/U grade.

Instructor normally should be the student's major professor or chair of the doctoral committee. This option will be permitted only in exceptional circumstances.

598. Master's Thesis Research and Preparation

(1-12) Staff

No unit credit allowed toward degree. S/U grade.

Only for research underlying thesis, writing thesis. Instructor should be chair of student's thesis committee.

599. Dissertation Research and Preparation

(1-12) Staff

Only for the writing of the doctoral dissertation. Instructor should be chair of student's doctoral committee.

FRENCH LITERATURE AND FILM TAUGHT IN ENGLISH

Courses for which no knowledge of French is required. An undergraduate major in French may enroll for credit in two quarters of any French literature or film course in English translation. See course descriptions above.

106X. Women in France: Images and Realities

(4) Brown, Greene

137X. Medieval Literature in Translation

(4) Brown

141X. Rabelais in Translation

(4) Staff

150X. Seventeenth-Century French Literature in Translation

(4) Tobin

160X. The Power of Negative Thinking: Sartre, Adorno, and Marcuse

(4) Sturm

161X. The Utopian Tradition

(4) Sturm

162X. Contrasts in Wit and Satire: Candide and Rasselas

(4) Temmer

163X. Diderot, Fiction, and Role-playing

(4) Temmer

164X. Rousseau and the Confessional Urge

(4) Temmer

165X. The Myth of Don Juan in Literature and Music

(4) Temmer

170X. Nineteenth-Century French Literature in Translation

(4) Walker

170Y-Z. The Nineteenth-Century French Novel in Translation

(4-4) Walker

172X. Literature and the Rise of the Modern World

(4) Walker

174X. Aspects of the French Novel

(4) Murray, Walker

176X. The Symbolist Heritage

(4) Cushing, Walker

177X. Literature and Religion in Modern France

(4) Walker

178X-Y-Z. French Film: Theory and Practice

(4-4-4) Greene

179X. Decadence

(4) Greene, Murray

180X. Existentialist Literature in Translation

(4) Murray

180Y. Proust in Translation

(4) Murray

182X-Y. The Twentieth-Century French Novel in Translation

(4-4) Cushing

183X. From Existential Phenomenology to Structuralism

(4) Sturm

184Y. French Film Directors

(4) Staff

184Z. Key Works of the French Cinema

(4) Staff

186X. Beckett and Godard: The Difficulties of Creation

(4) Greene

186Y. Poets and Painters in Twentieth-Century France

(4) Cushing

187Z. Surrealist Film

(4) Cushing, Greene

188X. Contemporary French Drama and Film in Translation

(4) Greene

189Y-Z. Personal Documentary: From Vertov to Cinema Verite

(4-4) Greene

190X. Cross-Currents in Modern French and Italian Film

(4) Greene

190Y. European Film Noir

(4) Greene

191X. Contemporary French Film and Culture

(4) Diawara

ITALIAN COURSES

LOWER DIVISION

Italian 1-6: All students progress at the same rate of speed and cover the same amount of material. At the end of the quarter all students who pass receive four units of credit. Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. As a result, the final grades for the quarter will be in the traditional range of A through F. Class and laboratory attendance are required. The instructor is primarily responsible for directing student learning. Tests are given to all students during

regular classes at fixed times. Students who have studied Italian at other institutions and who wish to continue the study of these languages at UCSB are required to take the placement examination given by the department.

1. Elementary Italian

(4) Staff

Introduction to the most basic elements of Italian grammar. Articles, adjectives, gender. Verbs in the present tense. (F,W)

2. Elementary Italian

(4) Staff

Prerequisite: Italian 1 or equivalent.

Logical continuation of Italian 1. Direct and indirect pronouns. Verbs in the past tense and the imperfect. Emphasis on the correct writing and speaking of Italian. (F,W,S)

3. Elementary Italian

(4) Staff

Prerequisite: Italian 2 or equivalent.

Continuation of Italian 2. Verbs in the future, conditional. Introduction to subjunctive. Further emphasis on the correct writing and speaking of Italian. (F,W,S)

4. Intermediate Italian

(4) Staff

Prerequisite: Italian 3 or equivalent.

The beginning of 2nd year Italian, which is more demanding than the first year. Emphasis on reading and comprehension of modern texts, with comprehensive review of grammar. (F,W,S)

5. Intermediate Italian

(4) Staff

Prerequisite: Italian 4 or equivalent.

Logical continuation of Italian 4, based on reading and comprehension of more elaborate texts. (F,W,S)

6. Intermediate Italian

(4) Staff

Prerequisite: Italian 5 or equivalent.

Reading and comprehension of chosen texts (short stories, etc.) and compositions. Readings

chosen from such representative anthologies as *Tempi Moderni* (Burney).

8A-B-C. Italian Conversation

(2-2-2) Staff

Prerequisite: Italian 3 or consent of instructor.

11A-B. Italian for Graduate Students

(4-4) Staff

Prerequisite: Italian 11A for 11B.

A service course for graduate students from other departments who need to satisfy language requirements. Divided into two levels: 11A (elementary level) for those who have no, or hardly any, knowledge of Italian; 11B (intermediate level) open to students who have an appropriate level of knowledge of the language, and to continuing students from 11A. Class meets twice weekly, offers grammatical preparation and practice for translation, but no individual projects.

14. Individualized Instruction 1-6

(1-24) Staff

May be repeated for a maximum of 24 units.

Entrance into the Italian 14 program is by sign-up in the department office only. All levels of Italian 14 are not offered every quarter.

Students will proceed at their own pace in completing each achievement level which is equivalent to one quarter of Italian. Students attend two group meetings and three consultations per week. Students must complete one level of achievement unit before proceeding to the next level. Students earn four quarter units of credit for each level of achievement unit completed.

25. Advanced Italian

(3) Bonadeo

Prerequisite: Italian 5 or equivalent. Can be taken concurrently with Italian 6.

Advanced course, designed to improve students' ability to write and read Italian, and to ease the transition to upper-division courses. Emphasis on grammar review, translation, composition, and the study of selected texts.

39X. Introduction to Italian Literature: From the Renaissance to the Early Twentieth Century

(3) Lawton

Major literary movements and tendencies studied against their historical and social background. Topics include Humanism, Rationalism, religious doctrine, the birth of modern Italy. Major authors studied include Dante, Machiavelli, Galileo, D'Annunzio, Mussolini. Lectures and readings in English.

UPPER DIVISION

Please note: Italian 6 or consent of the department is a prerequisite to all upper-division courses taught in Italian, except where specially noted.

106X. History and Culture of Italy in Translation

(4) Bonadeo

Prerequisites: English 2A-B.

History, art, and culture from 1100 to 1450. Lectures and readings in English.

106Y. History and Culture of Italy in Translation

(4) Bonadeo

Prerequisites: English 2A-B.

History, art, and culture from 1450 to the beginning of the eighteenth century. Lectures and readings in English.



Attackman Fritz Kunzel helped the Gauchos win the 1987 Western Collegiate Lacrosse League championship, the third time they have topped the league in the last five years. Classed in Division I, the team finished the season with a 17-2 record and ranked seventh nationally in terms of spectator attendance.

106Z. History and Culture of Italy in Translation

(4) Lawton

Prerequisites: English 2A-B.

Arts and society and their mutual impact on Italy from 1860 to the present. Lectures and readings in English.

110A-B. Dante: La Divina Commedia

(4-4) Bonadeo

Dante's *The Divine Comedy: Inferno, Purgatory, and Paradise* studied in their broad historical and moral contexts based on a close reading of the text. Lectures and readings in Italian.

110C. Petrarca e Boccaccio

(4) Bonadeo

Petrarca's *Rime* and Boccaccio's *Decameron* are analyzed to gain an understanding of the ethnic and culture of the Middle Ages.

114X. Dante: The Divine Comedy: Inferno

(4) Bonadeo

Prerequisites: English 2A-B.

An inquiry into the ethical, spiritual, and historical values of the first part of Dante's masterpiece. Lectures and readings in English.

114Y. Dante: The Divine Comedy: Purgatory and Paradise

(4) Bonadeo

Prerequisites: English 2A-B.

The interpretation of the second and last part of Dante's masterpiece, Purgatory and Paradise. Lectures and readings in English.

114Z. Petrarch and Boccaccio

(4) Bonadeo

Prerequisites: English 2A-B.

An inquiry into the spiritual and psychological world of Petrarch's *Canzoniere*, and in the social and ethical world of Boccaccio's *Decameron*. Lectures and readings in English.

115A. Giacomo Leopardi

(4) Bonadeo

Prerequisite: Italian 25.

The *Canti* and the *Operette morali* as spiritual and social documents of the poet's alienation from his age.

115B. Ugo Foscolo and Alessandro Manzoni

(4) Bonadeo

Prerequisite: Italian 25.

Jacopo Ortis and the *Sepolcri*: the prose and poetry of death and survival after death. The *Promessi Sposi*: Christian values in social context.

115C. Pascoli and Annunzio

(4) Lawton

Prerequisite: Italian 25.

The poetry of the end of the nineteenth century represented by Pascoli and D'Annunzio. Genres include fiction, poetry, and autobiography.

116X. Machiavelli

(4) Bonadeo

Prerequisites: English 2A-B.

A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli. Lectures and readings in English.

116Y. Love and Chivalry in the Italian Renaissance

(4) Bonadeo

Prerequisites: English 2A-B.

A study of the practice and ideal of love and chivalry within the social context of the times of Ariosto, Castiglione, Tasso, and Cellini. Lectures and readings in English.

116Z. Love and Society in the Italian Renaissance

(4) Bonadeo

Prerequisites: English 2A-B.

A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso. Lectures and readings in English.

117X. War and Peace in the Italian Renaissance

(4) Bonadeo

Prerequisites: English 2A-B.

Study of warfare in Italy in the age of Machiavelli and Guicciardini. One specific aspect of the Italian Renaissance is studied: ideas and attitudes towards warfare as expounded by the two above Italian historians and men of letters. In English.

118. Modern Italian Novel

(4) Rossi

Prerequisites: Italian 6 or equivalent. Consent of instructor.

Discussion of the major Italian novelists of the twentieth century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Lectures and readings in Italian.

118X. Modern Italian Novel in Translation

(4) Staff

Prerequisites: English 2A-B.

Discussion in English of the major Italian novelists of the twentieth century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Lectures and readings in English.

119A. Italian Poetry

(4) Rossi

Prerequisites: Italian 6 and 25, or consent of instructor.

Italian poetry from Carducci to contemporary poets.

119B. La Commedia

(4) Rossi

Prerequisites: Italian 6 and 25, or consent of instructor

Introduction of the theatrical tradition in Italy, illustrated by the plays of Goldoni, Pirandello, Ugo Betti, etc.

119C. La Novella

(4) Rossi

Prerequisites: Italian 6 and 25, or consent of instructor.

Introduction to the narrative tradition through the short story, illustrated by the work of Verga, Moravia, Pavese, Ginzburg, Calvino, etc.

120X. D.H. Lawrence, Verga, and Italy

(4) Bonadeo

Prerequisites: English 2A-B.

A study of Lawrence's perception of Italy and its people through his criticism of Verga, his travel books, and novels. Lectures and readings in English.

139X-Y-Z. Survey of Literature in Translation

(4-4-4) Lawton

Prerequisites: English 2A-B.

X: Renaissance and medieval Italian literature in translation. From Dante to Machiavelli.

Y: Studies in twentieth-century Italian literature from the start of the century to the postwar period. Futurism. Pirandello, Moravia, Silone, Vittorini, Sciascia. Political writers and literary reformers.

Z: Further study in twentieth-century Italian literature and political thought. Lectures and readings in English for 139X-Y-Z.

150X. Italian Novel into Film

(4) Lawton

Prerequisites: English 2A-B.

An analysis of major trends in the contemporary Italian novel and its thematic and stylistic impact on the work of major film directors. Special emphasis to be placed on Verga, Moravia, Silone, and Vittorini (the novel) and Visconti, Rossellini, and Lattuada (in film).

151X. Seminar on the Literature of the Italian South

(4) Lawton

Prerequisites: English 2A-B.

A study, through literature, of the southern question and related cultural and social problems. Authors will include Verga, Lampedusa, Levi, Silone, Vittorini, and Daniello Dolci. Possibly literary material will be illustrated by, or related to, selected films that have recorded similar experiences. Readings and discussion in English.

180X-Y. World Cinema

(4-4) Lawton

Prerequisites: English 2A-B. Italian 180X and 180Y may be taken up to a total of eight units.

Selected themes illustrate how directors of all countries and periods address themselves to the foremost issues of the age. Recent themes include: education, religion, labor, greed.

180Z. Italian Cinema

(4) Lawton

Prerequisites: English 2A-B.

Deals exclusively with Italian cinema. Lectures and readings in English.

188X-Y. Introduction to Italian Cinema

(4-4) Lawton

Prerequisites: English 2A-B.

Introduction to major trends in Italian cinema from the silent period to the sixties. Lectures and readings in English. Students taking the class for credit towards an Italian major will do the reading and writing in Italian.

199. Independent Studies in Italian

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Italian. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Individual investigations in literary fields.

GRADUATE COURSE**596. Directed Reading and Research**

(1-6) Staff

Prerequisites: graduate standing and consent of instructor. May be repeated for credit. Individual tutorial.

ITALIAN LITERATURE AND FILM TAUGHT IN ENGLISH

Courses for which no knowledge of Italian is required. See course descriptions above.

39X. Introduction to Italian Literature: From the Renaissance to the Early Twentieth Century

(3) Lawton

106X-Y-Z. History and Culture of Italy in Translation

(4-4-4) Bonadeo, Lawton

114X. Dante: The Divine Comedy: Inferno

(4) Bonadeo

114Y. Dante: The Divine Comedy: Purgatory and Paradise

(4) Bonadeo

114Z. Petrarch and Boccaccio

(4) Bonadeo

116X. Machiavelli

(4) Bonadeo

116Y. Love and Chivalry in the Italian Renaissance

(4) Bonadeo

116Z. Love and Society in the Italian Renaissance

(4) Bonadeo

117X. War and Peace in the Italian Renaissance

(4) Bonadeo

118X. Modern Italian Novel in Translation

(4) Staff

120X. D.H. Lawrence, Verga, and Italy

(4) Bonadeo

139X-Y-Z. Survey of Literature in Translation

(4-4-4) Lawton

150X. Italian Novel into Film

(4) Lawton

151X. Seminar on the Literature of the Italian South

(4) Lawton

180X-Y. World Cinema

(4-4) Lawton

180Z. Italian Cinema

(4) Lawton

188X-Y. Introduction to Italian Cinema

(4-4) Lawton

Geography

Department of Geography, Ellison Hall 3611; Telephone (805) 961-3663. Department Chair: Richard L. Church.

Faculty

Luc Anselin, Ph.D., Cornell University, Associate Professor (*spatial econometrics, regional modelling, urban planning,*)
Richard L. Church, Ph.D., Johns Hopkins University, Professor (*planning and environmental location/allocation modeling, locating and planning public facilities, water resources planning and operations research methods*)
Helen Couclelis, Ph.D., Cambridge University, Associate Professor (*urban and regional theory and modeling, planning, the philosophy of science*)
Frank Davis, Ph.D., Johns Hopkins University, Assistant Professor (*plant geography, plant ecology, natural resource management, remote sensing*)
Jeff Dozier, Ph.D., University of Michigan, Professor (*water resources, remote*

sensing, snow hydrology, energy balance climatology)
John E. Estes, Ph.D., UC Los Angeles, Professor (*regional resources determination and evaluation, land use, remote sensing information systems*)
Reginald G. Gollidge, Ph.D., University of Iowa, Professor (*behavioral approaches to urban and economic geography, cognitive mapping theory and methods*)
Julia Allen Jones, Ph.D., Johns Hopkins University, Assistant Professor (*soil genesis and biology, renewable resources, mathematical modelling*)
Joel Michaelsen, Ph.D., UC Berkeley, Assistant Professor (*climatology, meteorology, marine resources, temporal and spatial statistics*)
David S. Simonett, Ph.D., University of Sydney, Professor (*remote sensing, soils, vegetation geography*)
Raymond C. Smith, Ph.D., Stanford University, Professor (*marine resources, physical oceanography, remote sensing of the oceans*)
Terence R. Smith, Ph.D., Johns Hopkins University, Professor (*individual and aggregate decision making behavior, spatial data processing, machine intelligence*)
Waldo R. Tobler, Ph.D., University of Washington, Professor (*analytic cartography, mathematical modelling of geographical dynamics*)

The geography major is designed to provide a fundamental background for students seeking an interdisciplinary understanding of the world; to offer training for careers in business, government, and teaching; to prepare students for graduate studies in theoretical and applied work in geography; and to prepare students to conduct original research.

The program is organized around systematics courses and a range of quantitative and computer techniques, and students will normally acquire familiarity with elements of both. Students interested in becoming professional geographers are encouraged to develop additional expertise in one or more related disciplines. Specific individual programs may be worked out in consultation with advisers.

Undergraduate advisers are available for consultation throughout the year. A faculty member acts as adviser to graduate students and is available for consultation, by appointment, throughout the year. Prospective or new students should speak with an adviser when they arrive on campus.

After completing specific prerequisites, students with a bachelor's degree in geography are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Geography

Preparation for the major. Required: Geography 3; Geography 5; one of the following: Biology 11A, Botany 20, Environmental Studies 13, Geology 2-2L. Strongly recommended: Geography 7, Geology 117, one course in statistics, and one course in computer programming.

Upper-division major. Thirty-six upper-division units in geography are required, distributed as follows:

- A. 8 units from systematics courses: 102, 106, 107, 109, 110, 112, 113, 114, 114L, 119, 121, 122A, 123, 126, 130,

- 145, 146, 151, 153, 162, 163, 166, 167, 168, 169, 170, 170L, 183, 185, 190, 191, 191L, 192, 195, 198, 199 (consult adviser for unit limitations on 198/199 courses).
- B. 8 units from techniques courses: 101, 103, 115A-B-C-AL-BL-CL, 117, 118A-B-C, 122B, 125, 127, 128, 129, 136A-B, 164, 172, 172L, 174, 174L, 193 (only four units of 193 may be applied to the major).
- C. 4 units from regional courses: 141, 148, 150, 154, 155, 157, 159.
- D. Upper-division geography electives to bring total to 36. A maximum of eight upper-division units from related fields may be included, selected from a list of approved alternatives or by petition. Students who plan to obtain teaching credentials should not utilize this option.

GRADUATE PROGRAM

Admission

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in geography, or its equivalent, with a high scholastic average, particularly during the last two years of undergraduate study. Applicants without an undergraduate degree in geography, or with some other deficiency, may be admitted with the provision that additional work be taken during progress toward the M.A. degree. All entrants are required to submit verbal, quantitative, and analytical Graduate Record Examination scores; total combined scores on the verbal and quantitative portions of the exam should exceed 1100. Some undergraduate preparation in mathematics, statistics, and computer programming is encouraged.

For most students, a master's degree or equivalent will be required for admission to the doctoral program. In unusual circumstances, highly qualified candidates may be admitted without the M.A. degree.

Applications for fellowships must be submitted before January 31; applications for teaching and research assistantships before February 15; other applications before March 1.

Master of Arts—Geography

Degree Requirements

The M.A. degree may be obtained under either of two plans. Plan 1 requires 34 units, at least 20 in geography, plus a thesis suitable for publication. Plan 2 requires 46 units, at least 28 in geography, plus a final examination assessing general knowledge of geography and knowledge of the candidate's chosen specialty.

Doctor of Philosophy—Geography

Degree Requirements

The Ph.D. program is designed around five systematics areas (Group A) and three sets of techniques (Group B).

Group A — Systematics Areas

- 1. Vegetation Resources
- 2. Water Resources
- 3. Human Behavior Systems
- 4. Marine Resources
- 5. Urban and Regional Modeling

Group B — Techniques

- 1. Remote Sensing

2. Computer Cartography and Geographical Information Systems
3. Mathematical, Quantitative, and Computer Analysis

Students may elect one of the following plans: (1) two areas from Group A; (2) one area from A, one from B; (3) one area from A, one area from outside the department. No foreign language is required.

All doctoral candidates must serve as teaching assistants for at least one quarter.

Students will be required to take a diagnostic interview to ensure that they are qualified to undertake graduate-level work in the chosen fields of emphasis. Before advancement to candidacy, students must pass both a written and an oral qualifying examination and secure approval of a dissertation proposal. The final examination consists of a public dissertation lecture, followed by questions from the doctoral committee and the audience.

GEOGRAPHY COURSES

LOWER DIVISION

3. Physical Geography

(4) Dozier, Michaelsen, Davis

Required of all majors. Lecture, 3 hours; discussion, 1 hour.

Survey of man's physical environment. Distribution and interrelationships of atmospheric phenomena, climate, soils, plant and animal communities, and landforms.

5. Socioeconomic Geography

(4) T. Smith, Anselin, Couclelis

Required of all majors. Lecture, 3 hours; discussion, 1 hour.

Survey of distribution, evaluation, and use of the earth's resources. Specific emphasis on the population composition, urbanization, and inequalities in economic well-being within the framework of geographical change, environmental modification, and planning.

7. Spatial Data Collection and Processing

(4) Staff

A survey of techniques of spatial data processing including: 1) data collection (remote sensing, census techniques), 2) data representation (classical and computer cartography), 3) data storage (geographic databases), and 4) data analysis (spatial statistics and models).

UPPER DIVISION

101. Spatial Analysis

(4) Couclelis

Prerequisite: Geography 3 or 5, or consent of instructor. Mathematics 11A recommended. Lecture, 3 hours; discussion, 1 hour.

Basic principles of modeling human and environmental systems, emphasizing major approaches and mathematical methods. Examples include applications in fields such as ecology, water resources, demography, spatial interaction and allocation, transportation, decision making, etc.

102. Energy and Mass Transfer in Physical Geography and Remote Sensing

(4) Dozier

Prerequisites: Geography 3 and high school algebra and trigonometry. Mathematics 34A and 34B are recommended. Lecture, 3 hours; discussion, 1 hour.

Basic physical principles of transfer processes in physical geography and remote sensing. Topics include electromagnetic radiation, diffusion processes (soil heat flow, convection, evaporation), computation, and measurement. Examples of practical applications include thermal mapping, snowmelt models, soil moisture and microwave radiation, and radiation ecology.

103. Computational Concepts in Geography

(5) Dozier

Prerequisite: Computer Science 5 (any one) or equivalent.

Software tools, programming languages and concepts, computational methods, and program packages for geography. Applications in physical and socioeconomic geography, remote sensing, and cartography.

106. Urban Geography

(4) Golledge

Lecture, 3 hours.

The study of the social, economic, and physical nature of urban settlements. Analysis of the system of cities in the United States and its temporal evolution. Also the study of the internal structure and socioeconomic processes operating within the city.

107. Introduction to Regional Modeling and Planning

(4) Anselin

Prerequisite: junior standing or consent of instructor.

Introduction to the analysis of geographically separated regions. Topics include: definition of a region, industrial location, regional input-output analysis, migration issues, trade and interregional transportation, interregional environmental issues, spatial decision making and conflict resolution, and regional development.

109. Location and Environmental Issues in Planning

(4) Church

Prerequisite: Geography 3. Lecture, 3 hours; laboratory, 1 hour.

Location/allocation and environmental issues in planning by governments and the private sector. Conflicts over location. Location/allocation models, and environmental issues in locating pipelines, powerlines, highways, dams, retail outlets, and similar ventures.

110. Introduction to Meteorology

(4) Michaelsen

Prerequisite: Geography 3 or equivalent. Basic physics recommended. Lecture, 3 hours.

An introduction to the dynamics of the earth's atmosphere. Considered will be: energy exchange mechanisms, energy balance, condensation and precipitation processes, the dynamics of pressure and wind systems, and the distributions of weather disturbances. The course will include discussions of instrumentation, mapping of synoptic patterns, local weather systems, and methods and consequences of weather modification experiments.

112. Hydrology

(4) Dozier

Prerequisite: Geography 3 or consent of instructor. Lecture, 3 hours.

Nature of water cycle with emphasis on relationships among meteorological, surface water, and

ground water phenomena. Problems of contamination, human responses to floods and river regimes.

113. Deserts in Transformation: The Geography of the Arid Lands

(4) Allen Jones

Prerequisites: Geography 3, 5, or consent of instructor.

Human relationships with desert ecosystems. Overview of climate, landforms, water, soils, vegetation, and interactions in uninhabited and human desert cultures. Discussion of climate change, microclimate, grazing and other factors contributing to change in deserts.

114. World Soils: Formation and Management

(4) Allen Jones

Prerequisite: Geography 3 or Geology 2 or consent of instructor. Introductory botany and geology recommended.

Factors of soil formation and soil properties around the world. Soil development, classification, and important characteristics. Relates soil forming factors to soil properties of interest to agriculture, earth science, and engineering.

114L. Laboratory in Soil Analysis

(1) Allen Jones

Prerequisite: Must be taken concurrently with Geography 114.

Basic laboratory and field analysis of soils. Soil profile description, soil mapping, analysis of physical, chemical, biological soil properties. Students will collect, analyze, and report findings using standard methods.

115A. Geographic Photo Interpretation

(4) Estes

Prerequisites: Geography 3 or consent of instructor. Introductory botany and geology recommended. Must be taken concurrently with Geography 115AL. Lecture, 3 hours.

Interpretation of physical and cultural geographic phenomena as recorded by orbital and aerial sensing systems with emphasis on conventional aerial photography.

115AL. Laboratory in Geographic Photo Interpretation

(1) Estes

Prerequisites: Geography 3 or consent of instructor. Introductory botany and geology recommended. Must be taken concurrently with Geography 115A. Laboratory, 4 hours. Laboratory analysis of aerial and space photographs.

115B. Geographic Remote Sensing Techniques

(4) Estes, Staff

Prerequisites: Geography 115A-AL, or equivalent, or consent of instructor. Must be taken concurrently with Geography 115BL. Lecture, 3 hours.

Human and computer interpretation of environmental phenomena recorded by orbital and aerial multispectral sensing systems. Emphasis is on the nature of the data recorded and the extraction of useful decision information. Contemporary LANDSAT data is used. Laboratory uses an interactive image analysis program.

115BL. Laboratory in Geographic Remote Sensing Techniques

(1) Estes, Staff

Prerequisites: Geography 115A-AL, or equivalent, or consent of instructor. Must be taken concurrently with Geography 115B. Laboratory, 4 hours.

Laboratory analysis of space photography, and multispectral scanner analog and digital products. Interactive processing of LANDSAT digital tapes.

115C. Intermediate Geographic Remote Sensing Techniques

(4) Staff

Prerequisites: Geography 115B-BL or consent of instructor. Must be taken concurrently with Geography 115CL. Lecture, 3 hours.

Intermediate instruction in the interpretation of environmental phenomena recorded by satellite imaging systems with emphasis upon digital analysis.

115CL. Laboratory in Intermediate Geographic Remote Sensing Techniques

(1) Staff

Prerequisites: Geography 115B-BL or consent of instructor. Must be taken concurrently with Geography 115C. Laboratory, 4 hours.

Laboratory exercises employing VICAR and IBIS software: interactive and batch digital processing.

117. Geographic Field Techniques

(4) Staff

Prerequisite: Geography 3 or 5 or consent of instructor. Priority enrollment will be given first to senior, then junior geography majors. Lecture, 1 hour; laboratory, 6 hours.

Introduction of the basic methods of geographic survey and analysis.

118A. Introduction to Cartography

(4) Staff

Prerequisite: Geography 3 or 5 or consent of instructor. Lecture, 2 hours; laboratory, 4 hours.

An introduction to theory and a broad exposure to applications in the field. General focus on concepts, and on data manipulation for mapping. Topics include elements of generalization, symbolization, statistical and thematic mapping techniques.

118B. Production Cartography

(4) Staff

Prerequisite: Geography 118A or consent of instructor. Lecture, 2 hours; laboratory, 4 hours.

Technical aspects of map-making will be presented, including positive and negative artwork, elements of cartographic design, and an introduction to photographic production and reproduction of maps. Focus on high contrast, monochromatic photography and introductory printing techniques.

118C. Compilation and Cartographic Design

(4) Staff

Prerequisite: Geography 118B or consent of instructor. Lecture, 2 hours; laboratory, 4 hours.

Examination of problems encountered in the collection and representation of data. Focus on advanced production techniques, and on computer-assisted production.

119. Climatic Change and Its Consequences

(4) Michaelsen

Prerequisite: Geography 3 or consent of instructor. Lecture, 3 hours.

Theories and dynamics of climatic change. Emphasis on the problems of human utilization of different climatic zones under various degrees of uncertainty.

121. Real Estate and Housing Markets: A Geographical Perspective

(4) T. Smith, Shapiro (Economics), Anselin

Prerequisite: Economics 121. Lecture, 3 hours.

Consideration of the spatial structure of housing prices, finance, supply, and demand. A survey of the spatial behavior of users and market agents is given, as well as discussion of housing market

problems and policies. Environmental impacts of housing development are examined.

122A. Snow Hydrology

(4) Dozier

Prerequisites: Geography 3, or Environmental Studies 12; Geography 110 and 112 are recommended. Lecture, 3 hours; one two-day field trip.

Nature of snow, snow metamorphism, snow surface energy exchange, snowmelt runoff, and avalanche hazards. Analysis through field measurements, remote sensing, and computer simulation.

122B. Field Snow Hydrology

(2) Dozier

Prerequisites: Geography 122A, plus ski-mountaineering ability and consent of instructor. May be repeated once for credit. Seminar, 1 hour; laboratory, 3 hours; one five-day field trip required.

Field analysis of snow, snow surface energy exchange, and snowmelt runoff.

123. Glacial and Periglacial Geomorphology

(4) Staff

Prerequisite: Geography 3.

Formation of glaciers and causes of mountain and continental glaciation. Glacier mass balance and glacier motion. Landforms caused by glaciers and related processes in cold environments.

125. Introductory Computer Cartography

(4) Tobler

Prerequisite: Geography 3 or 5 or Computer Science 5 FO or consent of instructor.

(Computer Science 5 may be concurrent.)

Lecture, 2 hours; laboratory, 4 hours.

Introduction to the digital coding, storage, manipulation, and graphical display of geographical data. Algorithms and equipment useful for digitization and interactive cartography, including vector and raster display. Rudiments of geocoding, geoprocessing, and geographic information systems.

126. History of Cartography

(4) Tobler

Lecture, 3 hours.

Prehistoric maps, ptolemy, and medieval maps; the growth of geodesy, printing, and technology; exploration of the earth and near planets; topographic surveys and photogrammetry; LANDSAT; relation of contemporary thematic cartography to statistics and graphic science.

127. Cartographic Transformations

(4) Tobler

Prerequisite: Mathematics 11A, or 34B, or 5B, or consent of instructor. Lecture, 3 hours.

Classical map projections; cartograms; empirical "rubber sheeting"; bi-dimensional regression. The geometry of geography; geodesics; geographical circles; the distortion tensor; non-symmetric distances.

129. Special Topics in Cartography

(4) Tobler

Prerequisites: Geography 118A and 125, or consent of instructor. May be repeated for credit to a maximum of eight units. Lecture, 3 hours.

Examination of selected topics in cartographic research; topic may vary from year to year, to represent current research interests of faculty.

130. Forest Watershed Management

(4) Allen Jones

Prerequisite: Geography 3 or consent of instructor. Lecture, 3 hours.

Relates forest management activities to hydrologic processes, water quality, flooding, water

supply, and soil erosion and mass movements. Emphasizes decision making in context of multiple objectives, including wood production, watershed protection, and conservation in moist temperate, dry and moist tropical forests around the world.

136A. Remote Sensing of the Ocean—Descriptive

(4) R. Smith

Prerequisite: Geography 3. Lecture, 3 hours.

Physical and biological oceanography from a remote sensing perspective. Water masses, distribution of properties, heat budgets, circulation and primary productivity of the world oceans, and their space/time variability are described. Basic concepts for the remote sensing of the ocean are introduced.

136B. Remote Sensing of the Ocean—Dynamics

(4) R. Smith

Prerequisite: Geography 136A or consent of instructor. Geography 102 is recommended. Lecture, 3 hours.

Theory and models of environmental optics as a basis for remote sensing. The role of remote sensing for the study of oceanic processes and assessment of living marine resources is presented. Past, current and future ocean satellite missions are discussed in detail.

145. Migration

(4) Tobler

Prerequisite: Geography 5 recommended.

Lecture, 3 hours.

Study of the movement of people at local, national, and international scales. Relation of these to other events. Theories and models of migration, commuting, and spatial interaction.

146. Introduction to Transportation Systems Analysis

(4) Staff

Prerequisite: Economics 1 or consent of instructor. Lecture, 3 hours.

Introduction to the analysis of inter- and intra-city passenger and freight movements. Geographic and economic concepts are used to develop predictive and optimal design/maintenance models for the transportation system. Applications of the models are stressed.

148. California

(4) Staff

Lecture, 3 hours.

The unique landscapes of California and the physical, cultural, and biotic processes which have produced them.

150. Geography of the U.S.

(4) Estes

Lecture, 3 hours.

Intensive study of the physical and cultural processes that have shaped and are shaping the landscapes of the United States.

151. Physical Geography of the Tropics

(4) Davis

Prerequisite: Geography 3. Lecture, 3 hours.

Overview of climate, physiography, soils, vegetation, population growth, and resource management, emphasizing Latin America and the Caribbean.

153. Introduction to Human Spatial Behavior

(4) Golledge

Prerequisite: Geography 3 or 5, or Economics 1 or 109, or consent of instructor. Lecture, 3 hours.

Concentrates on process approaches to the analysis of human behavior within various spatial

systems. Includes environmental cognition, location decision processes, and spatial behavior in a welfare context.

154. Geography of Australia and New Zealand

(4) Simonett, Golledge
Lecture, 3 hours.

Characteristics and problems of Australia and New Zealand. Discussions of physical, economic, cultural, and regional problems and potentials.

155. Geography of the Soviet Union

(4) Estes
Lecture, 3 hours.

A systematic approach to the study of the physical and cultural phenomena which characterize the Soviet Union.

157. Jungles, Deserts, and Famine: The Geography of Africa

(4) Allen Jones
Prerequisite: upper-division standing, or consent of instructor.

Overview of climate, geology, soils, vegetation, human culture, and management in tropical rainforests, grasslands, and deserts. Physical and cultural processes leading to famines, expanding deserts, deforestation, war, migration, and other contemporary African problems.

159. Geography of Europe

(4) Couclelis
Lecture, 3 hours.

A systematic approach to the study of the human and physical resources of Europe. Special emphasis placed on the spatial aspects of urban, economic, and social processes.

162. Water Pollution

(4) Church, Davis
Lecture, 3 hours.

Human contamination of aquatic environments, including oceans, surface waters and groundwater, legislative framework and methods of pollution control.

163. The Ocean as a Physical System

(4) R. Smith
Prerequisite: Mathematics 3B recommended.

The significant physical processes will be investigated and equations of motion developed. Geostrophic flow, currents, waves, tides, and coastal dynamics will be introduced and fundamental processes discussed. Multiplatform sampling strategies, including remote sensing, are discussed as a means for studying fundamental oceanographic processes.

164. Navigation

(4) Staff
Lecture, 3 hours; laboratory, 2 hours.

Principles and practice of marine, land, and air navigation. Primary emphasis on marine and celestial navigation and piloting. Secondary emphasis on radio and satellite navigation, selected problems peculiar to land and air navigation, and other techniques.

166. Jet Stream Climatology

(4) Michaelsen
Prerequisite: Geography 110; a course in multivariate statistics recommended. Lecture, 3 hours.

Study of forces causing variability in the large-scale atmosphere circulation. Relationships between surface climate and upper atmospheric circulation. Theories on causes of climatic anomalies (droughts, cold spells, etc.). Techniques of predicting climatic variability.

167. Foundations of Biogeography

(4) Davis
Prerequisite: Geography 3 or four units from the biological sciences. Lecture, 3 hours.
Basic processes governing geographic distribution patterns of biota, including migration, evolution, isolation, and endemism. Biogeographic regions and their histories. Emphasis on plants and plant geography.

168. Surface Climate and Water Relations of Soils and Vegetation

(4) Allen Jones
Prerequisites: Geography 102, 110, 112, or 114 (preferably at least three of the four); plus Mathematics 3B or 34B or equivalent; plus a course in computer programming. Lecture, 3 hours.

Analysis of the sources, sinks, and cycling of water, nutrients and water vapor between soils, vegetation, and the lower atmosphere. Prediction of regional vegetation productivity and characteristics on the basis of climate, nutrient and water availability.

169. Dynamic Meteorology

(4) Michaelsen
Prerequisites: Mathematics 3C or equivalent, Geography 110 or a course in fluid mechanics. Lecture, 3 hours; laboratory, 1 hour.

Application of basic equations of fluid motion to flows on a rotating sphere. Emphasis will be placed on scaling techniques appropriate for describing and predicting large-scale atmospheric motion. Additional topics include numerical models, atmospheric waves, instability, and the mechanics of the general circulation.

170. Natural Vegetation: Classification, Inventory and Dynamics

(4) Davis
Prerequisites: Geography 3; and Geography 167 or consent of instructor. Lecture, 3 hours; laboratory, 1 hour.

Theory and application of natural vegetation classification, mapping and inventorying. Includes application of remote sensing, field sampling techniques and data analysis.

170L. Laboratory in Vegetation Data Analysis

(1) Davis
Prerequisite: must be taken concurrently with Geography 170.
Calculation and computation methods as appropriate to Geography 170. Implementation of computer programs of vegetation analysis.

172. Techniques of Geographic Data Analysis I

(3) Michaelsen, T. Smith
Prerequisites: Economics 5 or Probability and Statistics 33. Must be taken concurrently with Geography 172L.
Introduction to the use of probability theory and statistical techniques in analyzing problems in geography. Topics include: probability theory, analysis of variance, and univariate and multivariate regression.

172L. Laboratory in Geographic Data Analysis I

(2) Michaelsen, T. Smith
Prerequisites: Computer Science 5FO. Must be taken concurrently with Geography 172. Lecture, 2 hours; laboratory, 4 hours.
Introduction to the use of computers and computer programming in the analysis of geographic data. Existing computer software packages and programs developed by students will be used to implement and test the theory discussed in Geography 172.

174. Techniques in Geographic Data Analysis II

(3) Michaelsen, Anselin
Prerequisites: Geography 172 and 172L. Must be taken concurrently with Geography 174L. Lecture, 3 hours.
Analysis of spatial data. Spatial autocorrelation, autoregressive and moving average models, regression models applied to spatial problems, point processes.

174L. Laboratory in Geographic Data Analysis II

(2) Michaelsen, Anselin
Prerequisite: must be taken concurrently with Geography 174. Lecture, 2 hours; laboratory, 3 hours.
Calculation and computation methods as appropriate to Geography 174. Design and implementation of computer programs for analyzing spatial data.

183. Uncertainty and Spatial Decision Processes

(4) T. Smith
Prerequisite: Geography 5 or Economics 1 or 109. Lecture, 3 hours.
This course will concentrate on spatial decision making in the face of uncertainty, with references to consumer behavior, migration decisions, and geographical location decisions. Particular emphasis will be placed on information acquisition and mean-variance models.

185. Geography Planning and Policy Making

(4) Couclelis
Prerequisite: Geography 5, 106 or 109 or Environmental Studies 116.
Relevance of geographic knowledge and skills to aspects of planning and policy making. Includes review of core concepts in decision making, planning theory, systems, analysis, information systems, urban and regional modeling, forecasting, impact analysis, implementation of decisions, planning politics.

190. Location Theory in Geography

(4) Church, Anselin
Prerequisite: Geography 101 or Economics 1 or 109, or consent of instructor. Lecture, 3 hours.
An in-depth analysis of the processes underlying the spatial distribution of human economic activity through the use of models. Attention to agricultural, industrial, and settlement patterns.

191. Introduction to Optimization Models for Geographic Problems

(4) Church
Prerequisite: Mathematics 11A or consent of instructor. Lecture, 3 hours.
Survey of optimization techniques with applications to geographical problems. Methods include linear programming, dynamic programming, integer programming, networks, and queuing.

191L. Laboratory in Optimization Methods for Geographic Problems

(1) Church
Prerequisite: Geography 191 or concurrent enrollment.
Computer laboratory utilizing special optimization programs and computer graphics devices.

192. Urban and Environmental Systems Analysis

(4) Church
Prerequisite: Geography 101 or Economics 1 or 109, or consent of instructor. Lecture, 3 hours.
Applications of operations research techniques and decision analysis in structuring approaches to urban and environmental problems. Examples

are drawn from problems in facility location, regional models, transportation and other networks, utility corridors, and similar problems.

193. Internship in Geography (1-4)

Prerequisites: upper-division standing, 3.0 overall grade-point average, upper-division standing in geography major, and approval by instructor and department. May be repeated for credit to a maximum of 12 units but only four units may count toward the major.
Practical experience and research on geographical problems under faculty direction as interns with local, state, and federal agencies, with private research and development firms, and with other business organizations. Periodic and final reports required.

195. Selected Problems in Geography (2-4) Staff

Prerequisite: upper-division standing in geography. May be repeated once for credit.
Investigation of selected geographic factors of major significance to human environmental interactions. Scope and emphasis variable each time offered.

198. Readings in Geography (1-2) Staff

Prerequisites: consent of instructor and department chair. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in geography. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. The proposal for the study must be submitted to, and approved by, the department chair. Forms may be obtained in the department office. Maximum of four units may be accumulated.
Designed to provide in-depth directed inquiry into a topic of interest to the student.

199. Independent Studies (1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in geography. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. The proposal for the study must be submitted to, and approved by, the department chair. Forms may be obtained in the department office.
Selected research under the direction of a faculty member.

GRADUATE COURSES

Please note: the letters in parentheses at the end of graduate course descriptions correspond to the following key: (S)-Systematics; (T)-Techniques.

200A. Introduction to Geographic Research

(4) Simonett
Prerequisite: required of all geography graduate students. Normally taken in entering academic year. Seminar, 2 hours.
Formulation and definition of research problems and approaches. Introduction to techniques of geographic research, including library, laboratory, and computer facilities.

200AL. Geographic Research Laboratory

(2) Dozier
Prerequisite: Concurrent enrollment in Geography 200A.
Preparation of research materials for Geography 200A using departmental computational and text-processing facilities.

200B. Introduction to Geographic Research

(2) Staff
Required of all geography graduate students. Normally taken in spring quarter.
Advanced research methods and topics in geography, leading towards the development of an acceptable thesis or dissertation proposal draft or preparation for masters examination.

201. Seminar in Geography

(2) Staff
Prerequisite: required of all geography graduate students every quarter offered. Seminar, 2 hours.
A series of seminars on diverse problems in human and physical geography by current and visiting faculty.

202A-B. Environmental Optics

(4-4) Dozier, R. Smith
Prerequisite: Geography 102. Lecture, 3 hours.
Principles of radiation emission; radiative transfer equation and some solution methods; surface interactions; instrumentation; applications to remote sensing and energy budgets in atmosphere, ocean, and other media. (ST)

203. Seminar in Physical Geography

(4) Dozier
Prerequisites: an upper-division course in physical geography and consent of instructor. Seminar, 3 hours.
Survey of current literature and concepts in physical geography. (S)

208. Water Resource Systems Planning and Management

(4) Church
Introduction to techniques used in planning and management of water quantity and quality problems. Topics include river basin management of water quality, reservoir system operation for multipurpose use, and dealing with drought conditions. (S)

212. Surface-Water Hydrology

(4) Dozier
Prerequisite: Geography 112 or consent of instructor. Lecture, 3 hours.
Analysis of the magnitude and frequency of surface water flows, stream hydraulics, flood forecasting, and the role of surface water in shaping the landscape. (S)

213. Digital Techniques in Remote Sensing

(4) Staff
Prerequisites: Geography 115B and 115BL and 172 and 172L, and 270 and 270L or equivalent. Seminar, 3 hours.
Detailed examination of LANDSAT digital analysis, and image processing principles and procedures/VICAR and IBIS software. (T)

213L. Laboratory in Digital Techniques in Remote Sensing

(1) Staff
Prerequisites: Geography 115C or consent of instructor. Must be taken concurrently with Geography 213. Laboratory, 4 hours.
Laboratory exercises employing VICAR and IBIS software. Interactive and batch digital processing. (T)

214. Microwave Remote Sensing

(4) Estes, Simonett
Prerequisite: Geography 115C or consent of instructor. Seminar, 3 hours.
Examination of active and passive microwave sensing Ground spectrometer, aircraft systems, space systems. Radiometry, scattering theory, practical applications, and problems. (T)

215. Seminar in Remote Sensing

(2-4) Estes, Simonett
Prerequisite: Geography 115B or consent of instructor. May be repeated more than once with changes in content, and methods examined.
Advanced concepts in multispectral, multirate, manual, and automated remote sensing techniques. (ST)

216I. Remote Sensing Instrumentation

(4) Dozier
Prerequisites: Geography 102 and 115B or consent of instructor. Seminar, 3 hours.
Radiometric and geometric characteristics of remote sensing instruments including satellite radiometers, digital and analog output devices, and instruments for ground investigations in support of remote sensing. (T)

216S. Remote Sensing Software

(4) Dozier
Prerequisite: Geography 103. Lecture, 3 hours.
Analysis and development of software systems for remote sensing data. (T)

217. Advanced Topics in Field Research

(4) Staff
Prerequisite: Geography 117 or consent of instructor. May be repeated more than once with changes in instructor, content, and methods examined. Lecture, 2 hours; fieldwork, 2 hours.
Advanced field methodology in physical or human geography. (T)

218. Advanced Topics in Soils

(4) Allen Jones
Prerequisite: consent of instructor. Some botany and geology recommended. Lecture, 3 hours.
Prediction and interpretation of patterns in soil water, soil chemistry and other spatially distributed soil properties. Application of spatial statistics, location and allocation, mathematical models to problems in agriculture, earth science and engineering. (S)

219. Field Seminar in Geography

(1-4) Staff
Prerequisites: graduate standing and consent of instructor. Course may be repeated for up to a maximum of eight units.
Field trips of one day or more, organized as opportune. Appropriate report required for each trip. Units commensurate with time and effort spent participating in field excursions and subsequent report preparation. (T)

220. Seminar in Regional Analysis

(4) Tobler, Couclelis, Anselin
Prerequisites: Geography 172 and 172L or 270 and 270L or consent of instructor. Seminar, 4 hours.
Study of current research in regional analysis. The topic will differ each year, and will be announced in advance. (S)

221. Seminar in Transportation Geography

(4) Tobler

Prerequisites: Geography 172 and 172L, Geography 296 or concurrent enrollment or consent of instructor. Lecture, 2 hours; seminar, 1 hour.

Mathematical and statistical models of passenger and freight transportation systems. Both predictive and design models will be emphasized, as well as models used in public policy analysis. (S)

222. Spatial Decision Making

(4) T. Smith

Prerequisites: Geography 153 or 183: consent of instructor. Seminar, 3 hours.

Study of current theories and empirical evidence concerning decision making in a spatial context by individuals, firms, and government agencies. (S)

225. Urban Problems

(4) Golledge, Couclelis

Prerequisites: Geography 106 and 172 and 172L or equivalent; consent of instructor. Lecture, 1 hour; seminar, 2 hours.

Detailed studies of selected social, economic, and physical problems related to modern cities. (S)

226. Consumer Spatial Behavior

(4) Golledge

Prerequisites: Geography 153 and 172 and 172L or equivalent; consent of instructor. Seminar, 3 hours.

Theories and models of the spatial aspects of both rural and urban consumer behaviors; market spatial choice models. (S)

227. Scientific Reasoning in Geography

(4) Golledge, Couclelis

Prerequisites: graduate standing; consent of instructor. Seminar, 3 hours.

Discussion of the application of reasoning principles from various philosophies of science and social science to relevant problems in geography. (T)

228. Multidimensional Analysis of Spatial Problems

(4) Golledge, Tobler

Prerequisites: Geography 172 and 172L or equivalent; consent of instructor. Seminar, 3 hours.

Principles of multidimensional unfolding and scaling; applications and use of scaling algorithms to spatial problems; clustering; problems of large data sets; other multidimensional techniques. (ST)

229. Environmental Perception and Cognition

(4) Golledge, T. Smith

Prerequisites: graduate standing; consent of instructor. Recitation, 2 hours; seminar, 1 hour.

Theories and methods related to acquiring, representing, and analyzing knowledge of complex large-scale environments. (ST)

230. Behavioral Geography

(4) Golledge, Couclelis

Prerequisites: Geography 153 or equivalent, consent of instructor. Seminar, 3 hours.

Survey of behavioral approaches in a variety of areas of geography. (S)

232. Cartographic Transformations

(4) Tobler

Prerequisite: Mathematics 11A or 34B or 5B, or consent of instructor. Geography 125 is recommended. Seminar, 3 hours.

Classical map projections; cartograms; empirical "rubber sheeting"; bi-dimensional regression.

The geometry of geography; geodesics; geographical circles; the distortion tensor, nonsymmetric distances. (ST)

234. Seminar in Cartography

(4) Tobler

Prerequisite: Geography 125 or 127 or consent of instructor. Seminar, 4 hours.

Study and critique of advanced research work in cartography. Topic will vary from year to year. (T)

236A. Advanced Remote Sensing of the Ocean

(4) R. Smith

Prerequisite: Geography 163, 136AB or consent of instructor. Lecture, 3 hours

Advanced readings in research on theory and models of environmental optics and radiation as bases for the remote sensing of oceanic processes and the assessment of living marine resources. (ST)

236B. Graduate Seminar in Remote Sensing of the Ocean

(4) R. Smith

Prerequisite: Geography 163, 136AB or consent of instructor.

Graduate seminar in physical and biological oceanography from a remote sensing perspective. (ST)

242A. Advanced Snow Hydrology

(4) Dozier

Prerequisites: Geography 102 or 112 and 172 and 172L. Geography 110, 115B and 115BL, and 213 are recommended. Seminar, 3 hours; one two-day field trip.

Nature of snow, snow metamorphism, snow surface energy exchange, snowmelt runoff, and avalanche hazards. Analysis through field measurements, remote sensing, and computer simulation. (S)

242B. Field Snow Hydrology

(4) Dozier

Prerequisites: Geography 242A, plus ski-mountaineering ability and consent of instructor. Seminar, 1 hour; laboratory, 3 hours; one five-day field trip required.

Field analysis of snow, snow surface energy exchange, and snowmelt runoff. (TS)

251. Seminar in Forest Watershed Management

(4) Allen Jones

Recommended: Geography 112, Geography 130, Geography 191 or consent of instructor. Seminar, 4 hours.

Examines decision-making models linking forest management activities to hydrologic processes, soil, nutrient, and water movement in forests around the world. Emphasizes methods to achieve multiple objectives of wood production, watershed protection, and forest conservation. Topics include linear, dynamic, and multiobjective programming and location analysis applied to forest watershed management. (S)

266. Jet Stream Climatology

(4) Michaelsen

Prerequisite: Geography 110; a course in multivariate statistics recommended. Lecture, 3 hours; seminar, 1 hour.

Study of forces causing variability in the large-scale atmospheric circulation. Relationships between surface climate and upper atmospheric circulation. Theories on causes of climatic anomalies (droughts, cold spells, etc.). Techniques of predicting climatic variability. (S)

267. Foundations of Biogeography

(4) Davis

Prerequisite: Geography 167 or Botany 103A-B or 140 or 146 or Zoology 113A. Seminar, 3 hours.

The development of ideas and approaches to biogeography in a historical context. Emphasis on plants and plant geography. Seminar includes presentation of classic papers as well as current research work. Research paper required (S)

269. Dynamic Meteorology

(4) Michaelsen

Prerequisites: Mathematics 3C or equivalent; Geography 110 or course in fluid mechanics. Lecture, 3 hours; seminar, 1 hour.

Application of basic equations of fluid motion to flows on a rotating sphere. Emphasis will be placed on scaling techniques appropriate for describing and predicting large-scale atmospheric motion. Additional topics include numerical models, atmospheric waves, instability, and the mechanics of the general circulation. (S)

270. Techniques for Geographic Data Analysis

(4) Staff

Prerequisites: Geography 172-172L, and Mathematics 11A or 108A or equivalent.

Geography 270L required. Seminar, 3 hours.

Intermediate quantitative techniques as applied to geography. Flow networks, trend surface analysis; Markov processes, clustering algorithms; multivariate methods. (T)

270L. Laboratory in Geographic Data Analysis

(2) Staff

Prerequisite: must be taken concurrently with Geography 270. Laboratory, 2 hours.

Calculation and computation methods as appropriate to Geography 270. Intermediate skills in computer programming; use of various standard computation programs. (T)

272. Quantitative Biogeography

(4) Davis

Prerequisites: Geography 167, 172 and 172L, and consent of instructor. Lecture, 2 hours; seminar, 2 hours.

Mathematical modeling of patterns of migration, evolution, and extinction. Stochastic processes and Monte Carlo techniques of simulation. (ST)

273. Natural Vegetation Classification, Inventory, and Dynamics

(4) Davis

Prerequisites: Geography 167, 115B and 115BL, and 172 and 172L or consent of instructor. Recitation, 2 hours; seminar, 1 hour.

Problems in analysis of natural vegetation resources. Classification systems, sampling techniques, and applications of ecology and remote sensing to defining, mapping, inventorying, and exploring the dynamics of natural vegetation units. (TS)

274. Classification and Clustering in Geographic Data Analysis

(4) Staff

Prerequisites: Geography 115B and 115BL, 172 and 172L. Lecture, 3 hours.

Classification and clustering in real and metric space with applications for human geography, physical geography, and remote sensing. Spatial weighting and spatial constraints in classification models. (T)

275. Seminar in Geographical Information Systems

(4) Simonett, Tobler

Prerequisites: Geography 125 or equivalent; consent of instructor. Seminar, 4 hours.

Study of current trends in geographically oriented information processing systems. (ST)

276. Advanced Techniques in Geographic Data Analysis

(3) Michaelsen, Anselin
Prerequisites: Geography 172 and 172L and/or 270 and 270L. *Lecture, 3 hours.*
Analysis of spatial data. Spatial autocorrelation, autoregressive and moving average models, regression models applied to spatial problems, point processes. (T)

276L. Advanced Laboratory in Geographic Data Analysis

(2) Michaelsen, Anselin
Prerequisite: must be taken concurrently with Geography 276. *Lecture, 2 hours; laboratory, 3 hours.*
Calculation and computation methods as appropriate to Geography 276. Design and implementation of computer programs for analyzing spatial data. (T)

283. Seminar in Uncertainty and Spatial Decision Processes

(4) T. Smith
Seminar, 3 hours.
Advanced readings in this course will concentrate on spatial decision making in the face of uncertainty, with references to consumer behavior, migration decisions, and geographical location decision. Particular emphasis will be placed on information acquisition and mean variance models. (S)

284. Seminar in Graphics Programming

(4) Staff
Prerequisites: Geography 125 or equivalent; a working knowledge of FORTRAN or PASCAL. *Seminar, 3 hours.*
Algorithms for development of a rudimentary computer graphics system will be discussed, developed, and debugged. Topics include windowing, clipping, and concepts of 2- and 3-dimensional virtual space; point-, line-, and polygon-in-polygon searching, including polygon fill routines. (T)

285. Micrographics and Spatial Analysis

(4) Staff
Seminar, 3 hours.
Graphic displays as analytic tools in spatial problem solving. Focus on microcomputers, list processing languages, interactive programming environments. LOGO language used; comparison of programming strategies (recursion vs. iteration), graphical geometries (relative-absolute and Cartesian-polar), interactive design of statistical graphics. (T)

290. Urban and Environmental Systems Analysis

(4) Church
Prerequisite: Geography 101 or Economics 1 or 109, or consent of instructor. *Lecture, 3 hours.*
Applications of operations research techniques and decision analysis in structuring approaches to urban and environmental problems. Examples are drawn from problems in facility location, regional models, transportation and other networks, utility corridors, and similar problems. (ST)

291. Optimization Models for Geographic Problems

(4) Church
Prerequisite: Mathematics 11A or 132A or Geography 191 or consent of instructor. *Lecture, 3 hours.*
Survey of advanced optimization techniques with applications to geographical problems. Methods include advanced topics in linear programming, dynamic programming, integer programming, networks, and queuing. (T)

292. Mathematical Models in Physical Geography

(4) Staff
Prerequisites: Geography 172 and 172L and any upper-division physical geography course. *Seminar, 3 hours.*
Mathematical models of water and energy flows through the atmosphere, in stream channels, on and in soils and vegetation. (ST)

293. Mathematical Models in Human Geography

(4) Staff
Prerequisite: Geography 101, 172, 172L or equivalent. *Seminar, 3 hours.*
Mathematical models of sociospatial and economic spatial processes; cartographic and other methods of representation. (ST)

294. Advanced Topics in Location and Transportation Systems

(4) Church
Prerequisite: Geography 190 or 191 or consent of instructor. May be repeated more than once with changes in content, methods, and applications areas examined.
Study of current research and application of systems models in the analysis, design, operation, and scheduling of transport and location problems. (S)

295A. Artificial Intelligence — Cognitive Modeling I

(4) T. Smith
Prerequisite: Computer Science 185 recommended. *Lecture, 4 hours.*
Computer programming techniques for processing information in an "intelligent" manner. LISP language, control structure (pattern-directed vs. goal-directed), knowledge structures (declarative vs. procedural), and problem solving (search and inference) will be presented. (TS)

295B. Artificial Intelligence — Cognitive Modeling II

(4) T. Smith
Prerequisite: Geography 295A. *Lecture, 4 hours.*
Computer programming techniques for processing information in an "intelligent" manner. LISP programming will be emphasized, as will techniques for incorporating learning and analogies. Other topics are: expert systems, imagery, pattern recognition, planning, natural languages, story understanding, and spatial knowledge representation. (TS)

296. Nonlinear Systems and Geographic Analysis

(4) Staff
Prerequisite: Geography 291 or consent of instructor. *Lecture, 3 hours.*
Survey of nonlinear systems analysis with applications to geographical problems. Methods include nonlinear programming and Kuhn-Tucker analysis, complementarity theory, and variational inequality theory. Extensive use of computer software packages. (ST)

500. Teaching Assistant Training

(2-4) Dozier
Repeatable.
Compulsory course for new teaching assistants to examine geographic teaching methods. Emphasis on use of special equipment and facilities in the department, teaching aids, examination preparation and grading, student advising, and special problems.

596. Directed Reading and Research

(2-8) Staff
Prerequisites: consent of instructor and department chair. No more than half the graduate units necessary for the master's degree may be taken in Geography 596.
A written proposal for each tutorial must be approved by the department.

597. Individual Study for Ph.D. Examinations

(1-12) Staff
Prerequisites: consent of instructor and graduate adviser. No unit credit allowed toward advanced degree. S/U grade. Maximum of 12 units per quarter; enrollment limited to 24 units total.
Instructor should be student's major professor or chair of the doctoral committee.

598. Master's Thesis Research and Preparation

(1-6) Staff
Prerequisites: consent of instructor and graduate adviser. No unit credit allowed toward master's degree. S/U grading.
Research toward and writing of thesis.

599. Ph.D. Dissertation Research and Preparation

(1-6) Staff
Prerequisites: consent of instructor and graduate adviser. No unit credit allowed toward Ph.D. degree. S/U grading.
Research toward and writing of dissertation. Instructor should be chair of student's doctoral committee.



Geological Sciences

Department of Geological Sciences, Geological Sciences Building 1001; Telephone (805) 961-3471. Department Chair: Michael D. Fuller

Faculty

- Ralph J. Archuleta, Ph.D., Scripps Institution of Oceanography, Associate Professor (*theoretical geophysics, seismology*)
- Tanya M. Atwater, Ph.D., Scripps Institution of Oceanography, Professor (*plate tectonics, ocean floor spreading*)
- Stanley M. Awramik, Ph.D., Harvard University, Professor (*biogeology, paleobiology*)
- James R. Boles, Ph.D., University of Otago, Professor (*sedimentary petrology*)
- Cathy J. Busby-Spera, Ph.D., Princeton University, Assistant Professor (*sedimentology*)
- Preston E. Cloud, Ph.D., Yale University, Professor Emeritus
- John C. Crowell, Ph.D., UC Los Angeles, Professor Emeritus
- Richard V. Fisher, Ph.D., University of Washington, Professor (*physical stratigraphy, pyroclastic rocks*)
- Michael D. Fuller, Ph.D., Cambridge University, Professor (*geomagnetism*)
- Rachel M. Haymon, Ph.D., Scripps Institution of Oceanography, Lecturer (*marine hydrothermal geochemistry*)
- Clifford A. Hopson, Ph.D., Johns Hopkins University, Professor (*igneous and metamorphic petrology*)
- Edward A. Keller, Ph.D., Purdue University, Professor (*geomorphology, hydrology, environmental geology*)

- James P. Kennett, Ph.D., Victoria University of Wellington, New Zealand, Professor (*paleo-oceanography, marine geology*)
- John E. Lupton, Ph.D., California Institute of Technology, Associate Adjunct Professor (*isotope geochemistry, chemical oceanography*)
- Bruce P. Luyendyk, Ph.D., Scripps Institution of Oceanography, Professor (*marine geophysics, paleomagnetism*)
- Peter E. Malin, Ph.D., Princeton University, Lecturer (*theoretical and experimental seismology*)
- Ken C. Macdonald, Ph.D., Massachusetts Institute of Technology, Professor (*marine tectonics, marine seismology and magnetism*)
- James M. Mattinson, Ph.D., UC Santa Barbara, Associate Professor (*petrology, isotope geology*)
- Robert M. Norris, Ph.D., Scripps Institution of Oceanography, Professor Emeritus (*Quaternary geology*)
- William A. Prothero, Ph.D., UC San Diego, Professor (*marine seismology, seismic instrumentation*)
- Richard H. Sibson, Ph.D., University of London, Associate Professor (*structural geology, tectonics*)
- Frank J. Spera, Ph.D., University of California, Berkeley, Associate Professor (*igneous petrology, magma transport phenomena*)
- Arthur G. Sylvester, Ph.D., UC Los Angeles, Professor (*structural geology, petrofabrics, neotectonics*)
- Bruce H. Tiffney, Ph.D., Harvard University, Associate Professor (*evolutionary biology, paleobotany*)
- George R. Tilton, Ph.D., University of Chicago, Professor (*geochemistry, isotope geology*)
- George Tunell, Ph.D., Harvard University, Professor Emeritus
- James W. Valentine, Ph.D., UC Los Angeles, Professor (*paleobiology*)
- Donald W. Weaver, Ph.D., UC Berkeley, Professor (*stratigraphic paleontology, engineering geology*)
- William S. Wise, Ph.D., Johns Hopkins University, Professor (*mineralogy, geochemistry*)

Geology is the science of the earth—the study of its rocks, minerals, records of ancient life, and of the physical, chemical, and biological processes, past and present, at work in the earth's interior, on its surface, and within its envelope of water and air. The methods of geology are applicable to the study of the moon and the planets.

The undergraduate program in geology provides the background in elementary geology, basic sciences, and mathematics necessary for graduate work in geology or closely related fields such as geophysics, geochemistry, paleobiology, or oceanography. In addition, the program retains the flexibility to permit preparation for ultimate specialization in related fields. In consultation with the undergraduate adviser, students may develop individual programs tailored to their interests and career goals.

There are numerous career opportunities in the geological sciences in educational, governmental, and industrial organizations. After completing specific prerequisites, students with a bachelor's degree in geological sciences are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Prospective students are expected to confer with a department adviser *before* beginning a program in geology. Students may correspond with advisers before they enter the university, and they

are expected to attend a meeting with the department chair scheduled during registration week. The department offers a Bachelor of Arts degree in geological sciences and a Bachelor of Science degree in geophysics. A Bachelor of Science degree has been proposed and is being reviewed through campus and systemwide committees for final approval. This new degree may be offered in fall of 1988, or sooner. Please consult the department for further information. A graduate adviser, aided by a guidance committee, assists M.A. and Ph.D. candidates.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Geological Sciences

Before admission to the geological sciences major, students must complete all preparation for the major courses marked below with an asterisk with a grade-point average of 2.3 or higher; these courses may not be taken on a passed/not passed basis. Students must then complete a change of major petition available from their faculty adviser. Students who declare the pre-major are responsible for satisfying the degree requirements in effect at the time of their declaration.

Preparation for the major. Mathematics 3A*-3B*-3C* or appropriate portions of 3S; Chemistry 1A*-1AL-1B*-1BL-1C*-1CL; Physics 1-2-3-3L-4-4L (or 7 series); Geology 2*-2L, 3*-3L (or 101), 26*.

Also required, but not necessarily prior to admission to full major status, are English 2A-B; Geology 104A (to be taken concurrently with Geology 26); an additional course in mathematics, computer science, or statistics (chosen in consultation with the undergraduate adviser); and one full sequence from the additional competency requirement noted below.

The additional competency requirement specifies one full sequence from A-F. (A) Language courses 1, 2, 3, 4, 5, or equivalent from French, German, Russian, or Spanish; (B) Math 5A-B-C, Physics 5-5L, 105A-B, and 110A-B; (C) Biology 11A-B-C and eight approved upper-division units in biological sciences; (D) Mathematics 5B-C and eight approved upper-division mathematics units; (E) Computer Science and Statistics: Probability and Statistics 133A-B-C and one course from Computer Science 5FO, 5PA, 10, or 20; (F) Chemistry 113A-B-C plus four additional approved upper-division units in chemistry or geochemistry; (G) Individual Program—a coherent set of approved courses with a substantial upper-division component, or (H) Double Major.

Transfer students must consult the undergraduate adviser concerning the equivalency of their courses to these requirements.

Upper-division major. Note: In order to graduate, students must receive a grade of C or above in Geology 102A-B, 103, 103L, 104B, and 118, or obtain the permission of the department chair.

A minimum of 46 upper-division units in geology is required, selected in consultation with the undergraduate adviser. These units must include Optical Mineralogy (110); Paleontology (111; 111L is recommended); two courses from Petrology (102A, or 102B, or 114, including at least one lab); Structural Geology (103-103L); one course from each of the following fields: Geophysics (100, 136, 137, 138, or 157); Geochemistry (124, 125A, or 125B); Field Geology (104B); plus Summer Field (118) or approved substitute.

Geology majors may elect to complete a concentration in paleobiology or geochemistry. Completion of a concentration will not be acknowledged on the transcript or diploma.

Paleobiology. Preparation for a paleobiology concentration must include Biology 11A-B-C or equivalent. The following courses should be considered part of, or additions to, the upper-division major requirements; Geology 102B, 103, 103L, 104B, 111, 111L, 112, 114, 118, 121, 190; Biology 130A-B-C; Zoology 140, and 15 additional upper-division units in biology from an area of interest. Geology 105, 120, and 122 are recommended.

Geochemistry. Students interested in a geochemistry concentration should consult with the geological sciences undergraduate adviser concerning appropriate courses. Normally, geochemistry students complete Chemistry 113A-B-C during their junior or senior year.

Bachelor of Science—Geophysics

Before admission to the geophysics major, students must complete all preparation for the major courses marked below with an asterisk with a grade-point average of 2.67 or higher; these courses may not be taken on a passed/not passed basis. Students must then complete a change of major petition available from their faculty adviser. Students who declare the pre-major are responsible for satisfying the degree requirements in effect at the time of their declaration.

Preparation for the major. Math 3A*-3B*-3C*, 5A-5B-5C; Chemistry 1A*-1AL-1B*-1BL-1C*-1CL (or 2 series); Geology 2*-2L, 3*-3L, 26*; Physics 1-2-3-3L-4-4L-5-5L. Also required as preparation, but not necessarily prior to admission to full major status, are English 2A-2B; Physics 1, 2, 3, 3L, 4, 4L, 5, 5L; Mathematics 5A-B-C; and language courses 1, 2, 3 (French, German, Russian, Spanish). Transfer students must consult the undergraduate adviser concerning the equivalency of their courses to these requirements.

Upper-division major. Students must complete the courses marked with an asterisk below with a grade of C or above. At least 54 upper-division units in geology and physics, including two courses from Geology 102A*, 102B*, or 114; 103*-103L, 104A* or 104B*, 122 (or 158, 124, or 111 when appropriate), Geology 136; and a choice of Option 1 or Option 2. Option 1 is Geology 131 and two courses from 130, 137, 138, and 139. Option 2 is Geology 133 and one course from 130, 137, 138, 139. In physics, students must complete Physics 105A-B and either 100A-B or 110A-B.

Recommended electives: Computer programming, statistics, advanced mathematics, Geology 158 and 118.

GRADUATE PROGRAM

Admission

In addition to fulfilling the general requirements of the Graduate Division, a candidate for admission must present recent scores on the verbal, quantitative, and analytical parts of the Graduate Record Examination. Deadline for applications is February 10, but applicants are advised to submit well ahead of the deadline. Applicants are informed of acceptance or denial by mid-April. Students normally are not accepted into the graduate program during winter and spring quarters unless approved in early April of the previous year. The department encourages students with bachelor's degrees in sciences other than geology to apply for admission.

Master of Arts—Geological Sciences**Master of Science—Geophysics****Degree Requirements**

M.A. and M.S. candidates follow an integrated course of study recommended by a placement committee and the graduate adviser.

The student must demonstrate, by course work and by preparation of one research paper and by oral examination, superior competence in the field of specialization, broad knowledge in the geological sciences, and satisfactory knowledge of sciences other than geology that are relevant to the fields of interest.

Demonstration of a scientific reading knowledge of any modern foreign language, or the satisfactory completion of an approved related set of courses (eight units) supplementary to the program outside the department is required.

The M.A. and M.S. degrees are normally earned by preparation of a satisfactory thesis and completion of 30 units (at least 12 units in graduate courses). Geology 260 and all 500-series courses (except 596) are excluded from these graduate course units.

The candidate for the Master of Science degree in geophysics is also required to present a defense of the thesis in open forum.

Doctor of Philosophy—Geological Sciences

1. The student must demonstrate, by course work and by preparation of two research papers and by oral examination, superior competence in the field of specialization, broad knowledge in the geological sciences, and satisfactory knowledge of sciences other than geology that are relevant to the fields of interest.

2. The student must demonstrate, by examination or course work, either (a) excellent reading knowledge of one foreign language, generally French, German, or Russian, or adequate reading knowledge of two languages other than English; or (b) competence in a science, in mathematics, or in a field of study usually related to but not part of the area of specialization and normally outside the Department of Geological Sciences, subject to the approval of the department.

3. After completion of 1 and 2 above, but before being formally admitted to candidacy, the student must pass a comprehensive oral examination administered by the dissertation committee.

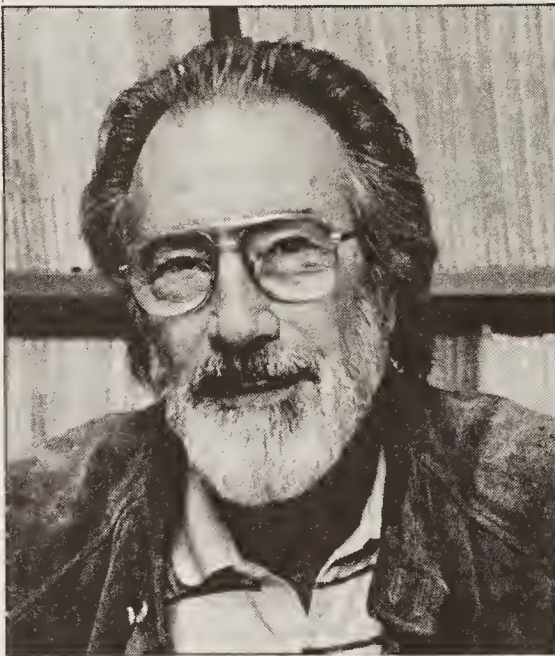
4. A dissertation must be prepared in a professional style and approved by the committee. The candidate is required to present its principal conclusions in open forum.

GEOLOGICAL SCIENCES COURSES**LOWER DIVISION****2. General Geology: Physical**

(3) Staff

Lecture, 3 hours.

An introduction to the science of the earth; properties and processes of the earth's interior and crust and their interaction with surface processes which modify and shape man's physical environment. (F,W,S)



My research and teaching in paleobiology are centered on the major events in the fossil record of marine animals. The principal groups of animals appear to have evolved in the sea within a relatively short period of time, geologically speaking, some 600 million years ago. This great burst of evolutionary inventiveness was unprecedented and is unsurpassed. Later, several massive extinctions removed most of the world's species — in one case, more than 90 percent from the sea. These are only the more spectacular of major events that have molded the modern world; without either the diversification or the extinctions, we would not be here.

To untangle the processes that have shaped the marine fauna requires a strong creative mixture of geological and biological sciences, and Santa Barbara is an outstanding place to pursue studies of this sort. When I came to Santa Barbara some nine years ago, I found that the Geological Sciences department here is truly superb, which seems to be one of the best-kept secrets in American academics. Important campus programs in evolution, marine biology, and ecology provide superior training for students and afford ample opportunity for collaborative research. In this multidisciplinary field students bring a rich mixture of backgrounds and variety of perspectives, which is delightful. Fossil studies have never been livelier.

James W. Valentine

James W. Valentine
Professor
Department of Geological Sciences

Dr. Valentine is a member of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences. He has been a Guggenheim Fellow, a Fulbright Research Scholar, and a Scholar in Residence at the Rockefeller Study Center in Bellagio, Italy. He received the 1970 Outstanding Paper Award from the *Journal of Paleontology*, and was for several years an associate editor of *Paleobiology*. He is the author of three textbooks and more than 125 journal articles.

2H. General Geology: Physical (Honors)

(4) Staff

Prerequisites: honors standing, consent of instructor. Lecture will meet concurrently with Geology 2. Lecture, 3 hours; discussion, 1 hour. An introduction to the science of the earth; properties and processes of the earth's interior and crust, and their interaction with surface processes which modify and shape man's physical environment. (F,W,S)

2L. Laboratory, General Geology:**Physical**

(1) Staff

Prerequisite: should be taken concurrently but may follow Geology 2. Laboratory, 3 hours. Identification of common minerals and rocks. Introduction to topographic and geologic maps, land forms, and geologic structures. (F,W,S)

3. General Geology: Historical

(3) Awramik

Prerequisite: Geology 2. Lecture, 3 hours. Antiquity and history of the earth, its physical changes, and the record of biological evolution. (S)

3H. General Geology: Historical (Honors)

(3) Staff

Prerequisites: honors standing, consent of instructor; lecture will meet concurrently with Geology 3. Elementary problems in paleontology and stratigraphy. (S)

3L. Laboratory, General Geology: Historical

(1) Staff

Prerequisite: should be taken concurrently but may follow Geology 3. Laboratory, 3 hours. Elementary problems in paleontology and stratigraphy. (S)

4. Introduction to Oceanography

(4) Staff

Lecture, 3 hours; discussion, 1 hour.

An introduction to oceanography covering the major physical, chemical and geological features of the oceans, their role in earth history, and potential use as a natural resource. (F,W,S)

4H. Introduction to Oceanography (Honors)

(4) Staff

Prerequisites: honors standing and consent of instructor; lecture will be concurrent with Geology 4, with honors discussion led by instructor.

A broad introduction to oceanography covering the major physical, chemical, biological, and geological features of the oceans, their role in earth history, and potential use as a natural resource. (F,W,S)

18. Field Studies in Geological Science

(1) Sylvester, Norris

Prerequisites: Geology 2 or its equivalent (may be taken concurrently); enrollment by consent of instructor only. May be repeated four times for credit. PN/P grading only.

Four and one-half day field trip, fall or spring quarter. Field studies under guidance of two or three staff members introducing the geology of California. Four trips offered in sequence: fall: Imperial and Colorado Deserts or Eastern Mojave Basin; spring: Death Valley or Saline Valley-Inyo-White Mtns., Mono Lake. (F,S)

26. Minerals

(5) Wise

Prerequisite: Chemistry 1A. Lecture, 3 hours; laboratory, 6 hours.

Properties, origins, associations, and determination of the more important ore and rock-forming minerals. (F)

30. The History of Life

(4) Awramik

Lecture, 3 hours; discussion, 1 hour.

The origin and evolution of life from its beginning over 3-1/2 billion years ago to the present day. Broad introduction to the complexity and diversity of life as revealed by fossils. (W)

30H. History of Life (Honors)

(4) Awramik

Prerequisites: honors standing and consent of instructor; lecture will be concurrent with Geology 30, with honors discussion led by instructor.

The origin and evolution of life from its beginning over 3-1/2 billion years ago to the present day. Broad introduction to the complexity and diversity of life as revealed by fossils. (W)

98. Readings in Geological Sciences

(1-3) Staff

Prerequisite: honors in geological sciences at lower-division level, as determined by faculty sponsor and chair of department. May be taken more than once.

Critical reviews and discussions of selected geological subjects. (F,W,S)

UPPER DIVISION**100. Introduction to Geophysics**

(4) Luyendyk

Prerequisite: Geology 2 or 3, Mathematics 3A, Physics 1, or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Survey of major topics in geophysics at an elementary level; the figure of the earth, its gravitational and magnetic fields, seismology and the deep structure of the earth, heat flow, methods of geophysical exploration. The geophysical basis of plate tectonics and sea floor spreading. (S)

101. Principles of Geology

(4) Weaver

Prerequisite: not open to students who have taken Geology 2. Open to nonmajors and majors. Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours; field trips.

Geological principles and processes. Accelerated lecture and reading followed by a mandatory four-day field trip to eastern California. (W)

102A. Petrology of Igneous Rocks

(4) Hopson

Prerequisites: Mathematics 3A-B-C or approved equivalent, with minimum of 2.3 grade-point average and no grade lower than C in this series; Geology 26. Lecture, 4 hours.

Introduction to the occurrence, associations, tectonics, and petrogenesis of plutonic and volcanic rocks. Introduction to physical chemistry of magma systems; magmatic crystallization and differentiation, pluton emplacement, volcanic eruption mechanisms. (W)

102B. Sedimentology

(4) Busby-Spera

Prerequisites: Mathematics 3A-B-C or approved equivalent, with minimum of 2.3 grade-point average and no grade lower than C in this series; Geology 26. Lecture, 3 hours; field trips.

The texture, mineralogy, classification, and primary structures of sedimentary rocks and their significance in relation to regional setting, environment of deposition, and postdepositional history. Field study will emphasize interpretation of sedimentary sequences. (S)

102BL. Sedimentology Laboratory

(3) Busby-Spera

Prerequisites: Geology 26, 102B, and 110

(102B normally taken concurrently). Lecture, 1 hour; laboratory, 5 hours.

Practical experience in identification of sedimentary rocks, using the petrographic microscope. (S)

102C. Petrology of Metamorphic Rocks

(3) Hopson

Prerequisite: Geology 102A or 102B. Lecture, 2 hours.

Introduction to the occurrence and petrogenesis of metamorphic rocks. Protoliths of metamorphic rocks; petrofabrics; metamorphic differentiation; metamorphic facies and facies series; granulization. Types of metamorphism and the tectonic setting. Extensive reading required. (Not offered 1987-88.)

103. Fundamentals of Structural Geology

(4) Sibson

Prerequisites: Mathematics 3A-B-C or approved equivalent, with minimum of 2.3 grade-point average and no grade lower than C in this series; Physics 1; Geology 102A, 102B, 104A, or 122; one rock laboratory course; senior standing in geology or consent of instructor. Lecture, 3 hours.

Studies of deformed rocks, folding and faulting, and geologic structures of the earth's crust. (W)

103L. Laboratory, Structural Geology

(3) Sibson

Prerequisite: Geology 103 to be taken concurrently. Laboratory, 4 hours; field, 4 hours.

Descriptive geometry applied to geologic problems, use of stereonet, structure contouring and isopaching, map interpretation, exercises in structural analysis and synthesis. (W)

104A. Field Studies in Geologic Methods

(5) Sylvester and Staff

Prerequisites: Geology 2, 2L, 3, 3L, or 101; consent of instructor. Majors only. Lecture, 2 hours; laboratory, 2 hours; field, 8 hours.

Introduction to the methods of geological observation and interpretation, with an emphasis on understanding earth processes in the field and reconstructing the physical history of the earth; the stratigraphic, petrologic, and structural relations of rocks; methods used in solving problems of the geological environment. Geologic report writing. (F)

104B. Field Methods

(5) Staff

Prerequisites: Mathematics 3A-B-C or approved equivalent, with minimum of 2.3 grade-point average and no grade lower than C in this series; Geology 102A or 102B or 122; Geology 103 and 103L with C or better grade, and consent of instructor. Certain upper-division prerequisites may be taken concurrently. Field and laboratory, 13 hours.

Geologic mapping on topographic maps and aerial photographs; use of geologic field instruments; field techniques; preparation of geologic maps and reports. (S)

105. Marine Geology

(4) Atwater

Prerequisites: Geology 2 or 101; introductory courses in trigonometry, chemistry, physics. Lecture, 3 hours.

The geologic features and history of the world's ocean basins, emphasizing recent advances in deep sea exploration. Taught from the viewpoint of plate tectonics as the underlying theme of marine geology. (W)

106. Geological Problems of the Human Environment

(4) Keller

Prerequisite: Geology 2 or 101 or equivalent, or consent of instructor. Lecture, 3 hours; field trips.

Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.), floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. (S)

108. Clastic Depositional Environments

(4) Busby-Spera

Prerequisite: Geology 102B or consent of instructor. Lecture, 3 hours; field, averages 3 hours.

Review of sandstone depositional models including eolian, fluvial, deltaic, shoreline, shelf, and turbidite fan models. Use of facies models for observation, prediction, and hydrodynamic interpretation. Tectonic controls on the nature and distribution of sedimentary facies. Paleogeographic reconstructions and sedimentary evolution of strike-slip, rift, foreland, and arc-related basins. (Not offered 1987-88.)

109. Geology of California

(4) Norris

Prerequisite: Geology 3 or consent of the instructor. Lecture, 3 hours; field trips. (Not offered 1987-88.)

110. Optical Mineralogy

(5) Staff

Prerequisite: Geology 25. Lecture, 3 hours; laboratory, 6 hours.

Principles and methods of optical crystallography and optical mineralogy. (S)

111. Principles of Paleontology

(3) Valentine

Prerequisite: a beginning biology course or consent of the instructor. Geology majors will normally take Geology 111L concurrently. Lecture, 3 hours.

The ecologic structure and evolution of the biosphere as illustrated by the fossil record, with special emphasis on the marine environment. (F)

111L. Principles of Paleontology Laboratory

(2) Valentine

Prerequisite: geology majors will normally take Geology 111 concurrently. Laboratory, 6 hours. Laboratory and field exercises and projects in the identification and interpretations of fossil taxa and fossil communities. (F)

112. Stratigraphic Paleontology

(4) Weaver

Prerequisite: Geology 104A, 111, or consent of instructor. Lecture, 2 hours; laboratory, 3 hours; field trips.

Principles of stratigraphic paleontology and the stratigraphic distribution of fossils. (Not offered 1987-88.)

113A. Ground Water Geology

(3) Weaver

Prerequisites: upper-division standing and consent of instructor. Lecture, 2 hours; laboratory, 2 hours.

Principles of ground water geology, including ground water occurrence and movement, exploration and development of ground water, and design of ground water wells. Discussion, laboratory, and field problems. (Not offered 1987-88.)

113B. Engineering Geology

(3) Keller

Prerequisite: junior standing, Geology 106, or consent of instructor. Lecture, 2 hours; laboratory, 2 hours.

Application of geologic principles to civil engineering problems in landslides, dam construction, highway construction, shoreline protection, construction materials, and military operations. Discussion, laboratory, and field problems. (Not offered 1987-88.)

114. Rocks

(3) Staff

Prerequisite: Geology 26 or equivalent. Lecture, 1 hour; laboratory, 6 hours.

An introduction to the classification and identification of hand specimens of igneous, sedimentary, and metamorphic rocks. (W)

116SS. Earth Science for Non-Science Majors

(4) Staff

Not available to geology majors.

Social, environmental, political, and frontier problems in the earth sciences. Topics selected from the many branches of earth science. Course designed for non-science students and teachers of elementary and secondary school. (SS)

117. Geomorphology

(4) Norris, Keller

Prerequisite: Geology 3, or 101, or consent of instructor. Lecture, 3 hours; field trips.

Evolution of the landscape and relief features of the earth. (W)

118. Summer Field Geology

(12) Staff

Prerequisites: Geology 102A or 102B; 103 and 103L with C or better grade; 104B with C or better grade. Eight weeks in the field during the summer.

Preparation of a geologic map, geologic sections, and a report on a selected region. (SS)

119. Field Investigation in Geology

(5-9) Staff

Prerequisites: Geology 102A or 102B; 103 and 103L with C or better grade; Geology 104B with C or better grade; and consent of instructor and chair. May be taken in lieu of Geology 118, with approval of the department.

Selected field areas are investigated as research problems. Content varies from year to year. (SS)

120. Field Paleobiology

(3-4) Awramik

Prerequisites: Geology 111, 111L, or consent of instructor. Seminar, 2 hours; laboratory, 2 hours.

Paleontologic field studies in selected areas. Studies include collection, identification, and description of fossils, their systematics, paleoecology, and biostratigraphy. (F)

121. Principles of Evolution

(4) Valentine

Prerequisites: Geology 2, 3, or Biology 11A-B. Lecture, 3 hours.

A foundation course concerning the mechanisms of evolution at micro- and macroevolutionary levels, and interpretation of the resulting patterns of adaptation and organic diversity. (W)

122. Physical Stratigraphy

(4) Fisher

Prerequisite: Geology 102B or consent of instructor. Lecture 3 hours; field trips.

Principles and processes involved in the development and description of stratified rock accumulations. (Not offered 1987-88.)

123. The Solar System

(4) Spera

Prerequisite: upper-division standing

The nature and evolution of the planets of the solar system. Elementary treatment of cosmochemistry, meteoritics, and comparative planetology with special reference to current ideas on solar system evolution. (F)

124. Geochemistry I

(4) Tilton, Boles

Prerequisites: Chemistry 1C, Mathematics 3C, and Geology 2 or 101. Lecture, 3 hours; discussion, 1 hour.

Distribution and geochemical classification of the elements. Crystal chemistry. Solubility and chemical equilibrium in solutions. Phase diagrams, crystallization of magmas, and metamorphic reactions. (F)

125A. Geochemistry II

(4) Tilton

Prerequisites: Mathematics 3B, Chemistry 1C. Lecture, 3 hours; discussion, 1 hour.

Geochemical classification and distribution of the elements. Partition coefficients and trace element fractionation in magmatic processes. Radiometric dating, use of strontium and lead isotopes as geochemical tracers. (W; alternate years.)

125B. Geochemistry III

(4) Tilton

Prerequisites: Mathematics 3B, Chemistry 1C. Lecture, 3 hours; discussion, 1 hour.

Primarily extraterrestrial geochemistry. Origin, age, and abundance of the elements. Geochemical evolution of meteorites, the moon, and earth. (Not offered 1987-88.)

126. Experimental Methods in Geochemistry

(3) Tilton

Prerequisite: Geology 125A or 125B. Lecture, 2 hours; laboratory, 3 hours.

Use of experimental techniques, including counting of alpha, beta, and gamma radiations applied to problems of geochemical interest. (S)

127. Crystal Chemistry

(4) Wise

Prerequisites: Chemistry 1A-B-C, Mathematics 3A. Lecture, 3 hours; laboratory, 3 hours.

Introduction to symmetry operations, internal symmetry, x-ray diffraction, and crystal chemistry. Systematic examinations of the structures, chemistry, and physical properties of the major rock-forming minerals. (Not offered 1987-88.)

128. Advanced Topics in Mineralogy

(1-2) Wise

Prerequisites: Geology 26 and consent of the instructor. May be repeated, eight units maximum. Tutorial.

Individual topics involving advanced methods and problems in mineralogy. Each has a value of one unit and it largely autotutorial and self-pacing. Topics include x-ray diffraction (powder and single-crystal), universal stage, and ore microscopy. (Not offered 1987-88.)

130. Analytical Methods in Geophysics and Geology

(4) Archuleta

Prerequisite: Mathematics 5C, or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Application of basic methods of analysis to geophysical and geological problems. Vector analysis, rotations, systems of linear equations, eigenvalues and eigenvectors, Fourier transforms, curve fitting, confidence limits, statistical tests. (S)

131. Field Geophysics

(5) Luyendyk

Prerequisites: Geology 100; 103 and 103L with C or better grade; Physics 3. Lecture, 3 hours; laboratory, 6 hours; discussion, 1 hour; field trips.

Field exercises in the techniques of exploration geophysics, including seismic refraction, gravity and magnetic surveying, and electrical methods. The field work will concentrate on selected areas of Southern California. (F)

133. Summer Field Geophysics

(12) Luyendyk

Prerequisites: Geology 100 or Geology 131. Field, six weeks (six days/week).

A field practicum in exploration geophysics employing magnetic, gravity, electric, and seismic methods. An exploration target will be investigated for six weeks in the western United States. Interpretive report required. (SS)

134. Introduction to Geological Data Analysis Using the Microcomputer

(4) Prothero

Prerequisites: Mathematics 3A-B-C. Lecture, 3 hours; laboratory, 6 hours.

The Macintosh microcomputer is used as a tool for applying the theory and techniques of geological data analysis. Elementary programming in BASIC, statistical inference, error propagation, curve fitting, time series analysis, and map drawing will use geological data and examples.

136. Geophysics (Seismology)

(5) Archuleta

Prerequisite: one year of college-level calculus and physics. Mathematics 5A recommended (may be taken concurrently). Lecture, 3 hours; discussion, 1 hour; laboratory, 3 hours.

Seismic instrumentation, wave propagation, earthquake physics, surface waves, free oscillations, and seismic hazards. (F)

137. Geophysics (Gravity and Geomagnetism)

(4) Fuller

Prerequisite: one year of college-level calculus and physics; Mathematics 5A recommended. Lecture, 3 hours; discussion, 1 hour.

The earth's gravity and magnetic fields, gravity and magnetic anomalies and their implications in oil and mineral exploration and plate tectonics. (W)

138. Geophysics (Heat Flow and Physics of Earth's Interior)

(4) Macdonald

Prerequisites: one year of college-level physics and Mathematics 5C or consent of instructor. Lecture, 3 hours; discussion, 1 hour.

Thermal history of the earth, cooling plates, heat sources and sinks, instruments and measurements, internal constitution, equations of state. (S)

139. Reflection Seismology

(4) Luyendyk

Prerequisites: Mathematics 5A or 119A, Physics 2, Geology 103 and 103L. Lecture, 3 hours; laboratory, 3 hours.

A review of the modern methods of hydrocarbon exploration by reflection seismology, including physical principles of reflections, data acquisition, processing, and interpretation. Laboratory exercises will focus on the interpretation of real data. (S)

140. Hydrothermal Ore Deposits

(4) Wise

Prerequisite: Geology 124 or consent of instructor. Lecture, 3 hours; laboratory, 3 hours. Geology, mineralogy, and geochemistry of hydrothermal ore deposits. (Not offered 1987-88.)

150. Advanced Sedimentary Petrography

(2) Boles

Prerequisites: *Geology 102BL; consent of instructor. Lecture, 1 hour; laboratory, 3 hours.* Emphasis on 1) interpreting detrital compositions in terms of depositional environments and tectonic reconstructions and 2) recognition and interpretation of diagenetic mineral assemblages. Advanced techniques of identification to include point counting centrifuge mineral separations, x-ray diffraction, cathodoluminescence, SEM and electron microprobe. (Not offered 1987-88.)

151. Petrography of Igneous Rocks

(4) Hopson

Prerequisites: *Geology 102A (may be taken concurrently), 110, and consent of instructor. Lecture, 2 hours; laboratory, 6 hours.* Identification, classification, and interpretation of igneous rocks, using the petrographic microscope and hand lens. (Not offered 1987-88.)

152. Petrography of Metamorphic Rocks

(3) Hopson

Prerequisites: *Geology 102C (normally taken concurrently), Geology 110, and consent of instructor. Lecture, 1 hour, laboratory, 6 hours.* Identification, classification, and interpretation of metamorphic rocks, using the petrographic microscope and hand lens. (Not offered 1987-88.)

157. Plate Tectonics

(4) Atwater,

Prerequisites: *basic geology and a year sequence in university mathematics and physics. Lecture, 3 hours; laboratory, 3 hours.* Introduction to sea floor spreading, plate tectonics, and continental drift. Geometry and evolution of present day plates. Measurement and calculation of plate motions. Geophysical and geological implications of resulting relative motions at plate boundaries. (S)

158. Topics in Advanced Structural Geology

(5) Sibson

Prerequisites: *Geology 103, 104B, and consent of instructor. Lecture, 3 hours; laboratory, 3 hours.*

Rock deformation in relation to crustal environment; finite strain analysis of deformed rocks; mineral deformation mechanisms, microstructures, and rock fabrics; folding in theory and practice; analysis of polyphase deformation; fault structure and mechanics; the shallow earthquake source. Field studies. (F)

160. Seminar in Geology

(1-1-1) Tilton, Archuleta, Awramik

Prerequisites: *upper-division standing, geology major; or consent of chair. May be repeated for credit to a maximum of 12 units. PN/P grading only.*

Attendance at departmental "Journal Club" (Geology 260, "Seminar in Geology") and brief written evaluations of the three papers which, in the student's judgment, were the best of the quarter. (F,W,S)

180. Seminar in Volcanology

(3-4) Fisher, Sylvester, Wise

Prerequisites: *Geology 102A and upper-division standing. Lecture, 1 hour; seminar, 2 hours.* Seminar in current topics in volcanology. Course normally followed by an optional field trip to an active volcanic region. (Not offered 1987-88.)

181. Field Studies in Marine Geophysics

(2-8) Macdonald

Prerequisites: *science major of advanced standing and consent of instructor. May be repeated once, but only eight units may be*

counted toward upper-division unit requirements.

Field studies in marine geophysical work with the opportunity of going to sea for up to one month. Lectures cover seismic, sonar, magnetic high resolution techniques for geologic study. (Not offered 1987-88.)

188. Field Studies in Neotectonics

(1-3) Sylvester

Prerequisites: *Geology 103, 103L; senior standing and consent of instructor. Field and tutorial. May be repeated for maximum of three units.*

Geodetic measurement of recent crustal movements around active faults and volcanoes. Includes techniques and analyses of precision levelling, triangulation, trilateration, and tiltmetry. Field work arranged as opportune. Term paper required if taken for three units. (F,W,S)

190. Advanced Studies in Paleobiology

(1-4) Valentine, Awramik

Prerequisites: *Geology 111 and consent of instructor. May be repeated for a maximum of 12 units. Laboratory, 3-12 hours.*

Designed to meet the interests and needs of individual students. Selected readings and laboratory work in systematic paleontology; field studies of recent or fossil biotas; animal-substrate relations, biostatistics, etc. (F,W,S)

192. Field Internship in Engineering Geology

(1-4) Weaver

Prerequisites: *Geology 113A and 113B, 3.0 grade-point average in major, and consent of instructor. May be repeated for credit but only four units may apply to the major.*

Individualized, practical approaches to problems in engineering geology by working under faculty supervision as interns with local or state agencies or private organizations. Students will spend most of their effort in carrying out fieldwork, but will prepare written reports. (F,W,S)

194. Group Studies for Advanced Students

(1-5) Staff

Prerequisites: *upper-division standing; consent of the instructor and department chair. Students may repeat the course; no more than five units will apply to the major.*

Intensive research or study by a small group of advanced students who share an interest in a topic not included in the regular departmental curriculum. (F,W,S)

196HA-HB-HC. Senior Honors Thesis

(4-4-4) Staff

Prerequisites: *senior honors standing in department, consent of instructor and chair.* Three quarter individual research project under the direction of a faculty member. Oral defense of written thesis required (F,W,S)

197H. Honors Seminar in Geology

(1) Staff

Prerequisite: *honors standing in department or consent of chair.*

Bimonthly, two-hour seminar to discuss advanced topics in the geological sciences. Guest speakers. (F,W,S)

198. Readings in the Geological Sciences

(1-4) Staff

Prerequisites: *students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in geology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Students must obtain consent of the instructor and the*

department chair. May be taken more than once at the option of the student; not more than four units may be included in the minimum requirements for the major. Registration after opening day of the quarter is not permitted. Critical reviews and discussions of selected geological subjects. (F,W,S)

199. Independent Studies in Geology

(1-5) Staff

Prerequisites: *students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in geology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Petition required. Registration after opening day of the quarter is not permitted.*

Selected readings or research under the direction of a faculty member (F,W,S)

GRADUATE COURSES**201. Graduate Field Seminar**

(4) Hopson

Required of all entering graduate students.

Significant regional geological problems will be studied stressing a variety of disciplinary approaches. Faculty members representing different fields will familiarize new students with multidisciplinary approaches, research methods and tools used within the department. Term paper/research proposal required. (F)

204. Geology of Fluids and Flow

(4) Fisher

Prerequisite: *consent of instructor. Lecture, 3 hours; field trips.*

Depositional mechanisms and deposits of geologically significant fluid systems such as turbidity currents, pyroclastic flows, debris flows, and others. (Not offered 1987-88.)

206. Volcaniclastic Rocks and Sediments

(4) Fisher

Prerequisite: *consent of instructor. Lecture, 2 hours; laboratory, 6 hours; field trips.*

Genesis and description of volcaniclastic rocks—pyroclastic, hyaloclastic, and epiclastic. Dispersal and depositional mechanisms, including subaerial and submarine varieties. (Not offered 1987-88.)

207. Diagenesis of Clastic Rocks

(3) Boles

Prerequisites: *Geology 102B, 124, 110, or consent of instructor. Lecture, 2 hours; laboratory, 3 hours.*

Diagenesis of clastic rocks including volcanic tuffs, sandstones, and shales. Course emphasizes controls of pressure, temperature, and solution chemistry to diagenesis and relates these controls to depositional and postdepositional environments. Laboratory includes application of thin section, x-ray diffraction, cathode luminescence to solving diagenetic problems. (Not offered 1987-88.)

208. Clastic Depositional Environments

(4) Busby-Spera

Prerequisite: *Geology 102B or consent of instructor. Lecture, 3 hours; field, variable.*

Review of sandstone depositional models including eolian, fluvial, deltaic, shoreline, shelf, and turbidite fan models. Use of facies models for observation, prediction, and hydrodynamic interpretation. Tectonic controls on the nature and distribution of sedimentary facies. Paleogeographic reconstructions and the sedimentary evolution of strike-slip, rift, foreland, and arc-related basins. (Not offered 1987-88.)

209. Tectonic Controls on Sedimentation
(3) Busby-Spera*Prerequisite: consent of instructor. Seminar, 3 hours; preparation, 6 hours.*

Origin and evolution of sedimentary basins. Discussion of assigned papers on selected topics, including sedimentation in strike-slip basins, foreland basins, arc-trench systems, rift margins and aulocogens. Term paper required. Content of course will vary year to year. (F)

210. Paleocology: Principles and Approaches

(4) Valentine

Prerequisite: consent of instructor. Discussion, 3 hours.

Application of paleontologic approaches to the interpretation of ancient environments and the solution of paleobiological problems. Laboratory, field, or library research leading to a term paper. (S)

212. Seminar in Stratigraphy and Paleontology

(2) Weaver

Prerequisites: Geology 111, 112. Discussion, 2 hours.

A review and discussion of selected current and classic works in the field of stratigraphy and paleontology. (Not offered 1987-88.)

214. Seminar in Marine Geophysics

(2-4) Macdonald and Staff

Prerequisite: consent of instructor. Seminar, 2-4 hours. Appropriate for majors in geology and physics. May be repeated for credit.

Current discoveries and unsolved problems in marine geophysics. Instruments and methods of study. (Not offered 1987-88.)

215. Pre-Phanerozoic Biogeology

(4) Awramik

Prerequisites: advanced standing in geological or biological sciences; field trip; consent of instructor.

Problems in pre-Phanerozoic biogeology. Topically oriented seminars, discussions, and laboratories dealing with the nature of the early biosphere, atmosphere, and hydrosphere. Emphasis on the fossil record, both stromatolites and microfossils. (Not offered 1987-88.)

218. Micropaleontology

(4) Weaver

*Prerequisites: Geology 111, 112, or consent of instructor. Lecture, 2 hours; laboratory, 6 hours. (on demand)***220. Biogeology**

(4) Awramik

Prerequisite: consent of instructor. Seminar and field trips.

Advanced topics in biogeology. Deals primarily with Phanerozoic and contemporary problems bearing on the interpretation of global history. Emphasis will be on student projects designed to develop research skills and techniques. (F)

221. Seminar in Petrofabrics

(4) Sylvester

Prerequisites: Geology 103 and 110, or consent of instructor. Lecture, 2 hours; laboratory, 6 hours.

Theoretical, experimental, and empirical aspects of microscopic analysis of metamorphic tectonites. (W)

222. Advanced Topics in Stratigraphy

(4) Busby-Spera

Prerequisite: consent of instructor. Lecture, 3 hours; field trips.

Current topics in stratigraphy with emphasis on paleogeographic/tectonic reconstructions. Field research in Cordilleran United States or Mexico,

supplemented by laboratory studies and classroom discussion of published literature. Content of course will change from year to year. (W)

223. Seminar in Petrology

(4) Spera

Prerequisites: Geology 102A, 102C. Seminar, 3 hours.

Selected topics in igneous and metamorphic petrology. (W)

224. Advanced Volcanology

(4) Fisher, Hopson, Sylvester, Wise

Prerequisites: Geology 102A-B, and 102BL, 124, and 151. Lecture, 2 hours; laboratory, 6 hours.

The study of volcanic vent areas, hypabyssal rocks, mineralization, and hydrothermal alteration, eruption processes and mechanisms of emplacement of volcanic rocks; growth of active volcanoes; geophysics and geochemical surveillance; diagenetic alteration and secondary mineralization. (Not offered 1987-88.)

225. Advanced Igneous Petrology

(4) Spera

*Prerequisite: Geology 102A or equivalent.**Lecture, 3 hours; discussion, 1 hour.*

The study of igneous rocks and their origins, with emphasis on their petrography, physical chemistry, and field relations. (Not offered 1987-88.)

226A. Thermochemistry of Geological Systems

(4) Spera

Prerequisite: elementary thermodynamics or physical chemistry.

Derivation of the laws of thermodynamics; applications to geological problems of multicomponent systems, thermodynamic properties of geological materials. (W)

226B. Thermochemistry of Geological Systems

(4) Spera

Prerequisite: elementary thermodynamics or physical chemistry.

Derivation of the laws of thermodynamics; applications to geological problems of multicomponent systems, thermodynamic properties of geological materials. (S)

227. Mineral Paragenesis

(2) Wise

Prerequisite: Geology 128, or consent of instructor. Lecture, 2 hours.

Application of mineral data, such as composition and structural state, to rock origins. (S)

227L. Laboratory, Mineral Paragenesis

(2) Wise

*Geology 227 to be taken concurrently.**Laboratory, 6 hours.*

Practical application of mineral data, such as composition and structural state, to rock origins. (S)

228A. Isotope Geology

(3) Tilton, Mattinson

Seminar, 2 hours.

Current research in isotope geology or geochemistry. Typical topics include use of lead, strontium, neodymium, and other radioactive isotopic systems as natural tracers. Light stable isotopes with emphasis on oxygen. Geochemical evolution of the earth's crust and mantle. (Not offered 1987-88.)

228B. Advanced Geochronology

(3) Tilton, Mattinson

Seminar, 2 hours.

Current topics in geochronology with application to petrological and geological problems. (Not offered 1987-88.)

229. Analytical Techniques in Geochemistry

(1-3) Wise

Prerequisite: consent of instructor. Autotutorial.

Autotutorial modules in the theory and practice in methods of geochemical analysis. Modules include electron microprobe (3 units), x-ray fluorescence (1 unit), and atomic absorption spectroscopy (1 unit). (Not offered 1987-88.)

230. Field Studies in Tectonics

(4) Crowell

Prerequisite: Geology 201 or consent of instructor. Seminar, discussion, and field trips.

Advanced seminar on a local tectonic problem. (Not offered 1987-88.)

232. Seismotectonics and Fault Structure

(4) Sibson

*Prerequisite: Geology 103 or equivalent.**Lecture, 2 hours; seminar, 2 hours; field.*

Space-time distribution, source characteristics, slip contribution and surface effects of crustal earthquakes. Techniques for assessment of seismic risk. Structure and deformation processes in fault zones at different crustal levels. Fault mechanics and the shallow earthquake source. (F)

235. Plate Tectonics Seminar

(2-4) Atwater

Attend lectures with Geology 157. Lecture, 3 hours; seminar, 1 hour.

Read recent related articles. Students present and discuss selected topics in separate seminar. Complete term paper and/or problem sets for three or four units. (S)

244. Array Analysis of Seismic Sources

(3) Archuleta

Prerequisites: graduate status and consent of instructor.

This course will review basic methods of analyzing seismograms from an array of seismometers to study seismic sources. The course requires a knowledge of linear algebra, spectral analysis, and wave propagation in an elastic medium. (W)

245. Seminar in Neotectonics

(3) Sylvester

Prerequisites: Geology 103, 103L, or equivalent; consent of instructor. Seminar, 3 hours; field trips.

Observation, interpretation, and significance of Holocene, historic, and current crustal movements caused by faulting, volcanism, subsidence, hydrocompaction, and isostatic adjustments. (W)

247. Seminar in Quaternary Geology

(3) Keller

*Prerequisite: Geology 117 or consent of instructor. May be repeated for credit.**Discussion, 3 hours; field.*

Selected topics in quaternary geology. Subject matter will change from year to year. (Not offered 1987-88.)

249. Seminar in Structure and Tectonics

(4) Sylvester

Prerequisite: Geology 201 or consent of instructor. Seminar, 3 hours.

Topical structural geology and tectonics. (Not offered 1987-88.)

251. Interpretation Theory in Geophysics

(3) Luyendyk

Prerequisite: consent of instructor. May be repeated for credit. Seminar, 3 hours.

Interpretation of geophysical data by direct and indirect methods, with the aim of determining subsurface geologic structure. Exercises will include modeling and inversion of either magnetic,

gravity, and seismic data. Content will vary from year to year. (Not offered 1987-88.)

252. Geophysical Time Series Analysis

(3) Prothero

Prerequisites: Mathematics 5A-B-C, or equivalent. Seminar, 3 hours.

Basic principles of time series analysis and signal processing. Applications to geophysical data, including Fourier transforms, convolution, filtering, confidence limits, response functions, collection and processing of data, noise, power spectral density, and cross-correlation. Problems requiring the use of the computer are assigned. (Not offered 1987-88.)

253. Earth's Magnetic Field

(3) Staff

Prerequisite: Geology 137 or equivalent. Seminar, 3 hours.

A discussion of the earth's magnetic field and models of its origin. The present morphology and the paleomagnetic record of the history of the field. Particular attention will be paid to secular variation and to reversals. The principles of magnetohydrodynamics as applied to the origin of the field in the core of the earth will be developed. (Not offered 1987-88.)

254A. Physics of Rock Magnetism

(3) Fuller

Prerequisite: Geology 137 or equivalent. Seminar, 3 hours.

A discussion of the physical principles of the magnetism of rocks. Molecular field and exchange models of magnetism. Domain studies. The processes of magnetization of single domain and multidomain material applied to the natural magnetic phases found in rocks. (Not offered 1987-88.)

254B. Paleomagnetism

(3) Fuller

Prerequisite: Geology 137 or equivalent. Seminar, 3 hours.

The methods and principal results of paleomagnetism. The collection, measurement, and statistical analysis of paleomagnetic samples. The paleomagnetic record of the geomagnetic field. The test of continental drift and the application of paleomagnetism to plate tectonics. (Not offered 1987-88.)

254C. Seminar in Rock Magnetism and Paleomagnetism

(2) Fuller

Prerequisites: Geology 137 or equivalent; consent of instructor. May be repeated for credit. Seminar, 2 hours.

Current topics of research in rock magnetism and paleomagnetism. Subject matter will vary from year to year. (Not offered 1987-88.)

255. Advanced Seismology

(3) Prothero

Prerequisites: Mathematics 5A-B-C or equivalent. May be repeated for credit. Discussion, 3 hours.

Selected topics in advanced seismology, such as seismograph theory, body and surface wave propagation, free oscillations of the earth, earthquake physics, strong motion seismology, earthquake/explosion discrimination. Applications to the study of deep structure of the earth. (Not offered 1987-88.)

256. Inverse Theory in Geophysics

(3) Prothero

Prerequisites: Mathematics 5A-B-C-D. Linear algebra extremely useful. Lecture, 3 hours. Methods of inverting geophysical data to obtain useful geophysical models. Stability, resolution,

and accuracy of models obtained using inverse methods. Methods of linear algebra including eigenvalue and singular value decomposition analysis for overdetermined systems will be developed, using real geophysical problems as examples. (F)

257. Earthquake Source Mechanics

(3) Archuleta

Prerequisites: consent of instructor and Mathematics 5C or its equivalent. Lecture, 2 hours; seminar, 1 hour.

Examination of kinematic and dynamic descriptions of earthquake sources and their relation to data. Point sources, moment tensor, dislocations, equivalent forces, source parameters, source spectra, finite faults, fracture criteria, rupture velocity. (Not offered 1987-88.)

258. Advanced Structural Geology

(4) Sibson

Prerequisites: Geology 103 and 104B and consent of instructor. Lecture, 3 hours; laboratory, 3 hours; field studies.

Selected topics in advanced structural geology: rock deformation in relation to crustal environment; finite strain analysis of deformed rocks; mineral deformation mechanisms, microstructures, and rock fabrics; folding in theory and practice; analysis of polyphase deformation; fault structure and mechanics; the shallow earthquake source. (F)

259. Paleomagnetism and Tectonics

(3) Luyendyk

Readings and discussion on topics concerning the tectonics of the Pacific rim, and especially the western U.S. Cordillera, as approached by the paleomagnetic method. Field trips and term paper required. (W)

260. Seminar in Geology

(1) Hopson, Spera, Macdonald

Required of all first year graduate students. May be repeated for credit. PN/P grading only. Seminar, 1 hour.

Presentation and discussion of current research, and reviews of the literature on selected geologic concepts. Students will present material reflecting their interests in geology for critical appraisal, of both content and manner of presentation, by selected members of the seminar. Emphasis will be placed on assisting students in developing professional speaking style. (F,W,S)

270. Seminar in Geologic Problems

(1-3) Staff

Prerequisite: graduate standing. Discussion, 1-3 hours.

Review and discussion of a current problem in geology. Content is variable and depends on student interest. (On demand.)

280. Seminar in Field Geology

(1-4) Staff

Credit is one half of one unit per day in the field, with a maximum of one unit for any trip. May be repeated for a maximum of eight units each academic year. S/U grading.

Field trips of one day or more, organized as opportune. Appropriate report required for each trip. (On demand.)

281. Field Studies in Marine Geophysics

(2-8) Macdonald

Prerequisite: consent of instructor. Lecture, 3 hours; laboratory, up to 40 hours.

Field studies in marine geophysics using seismic, sonar, magnetic techniques in high resolution studies of deep-sea geologic features. Normally involves going to sea for one month. (F)

292. Field Internship in Engineering Geology

(1-4) Weaver

Prerequisites: Geology 113A and B, and consent of instructor. Only four units may apply to the graduate unit requirement for the M.A. degree.

Practical experience in problems in engineering geology, working under faculty supervision as interns with local or state agencies of private organizations. Students will spend most of their effort in field research, but also will prepare written reports. (On demand.)

501. Practicum in Instruction

(1-4) Staff

Prerequisite: concurrent teaching assistant appointment. No unit credit allowed toward degree.

Practical experience in teaching in geological sciences. Student will have responsibility for one or more laboratory and/or discussion sections. Evaluations will be made by both staff and class.

502. Teaching Assistant Training

(2) Staff

Maximum of three quarters. No unit credit allowed toward degree.

Orientation and workshop in professional conduct and responsibilities. Course will involve observation of student in teaching situation (faculty visits or videotaping) and follow-up conferences, evaluations, and follow-up. (F)

503. Practicum in Research

(1-6) Staff

Prerequisite: concurrent research assistant appointment. No unit credit allowed toward degree.

Practical experience in research in the geological sciences, under supervision of faculty member.

596. Directed Reading and Research

(2-12) Staff

Prerequisites: consent of instructor and graduate adviser. No more than half the units necessary for the master's degree may be taken in Geology 596.

Individual tutorial. Written proposal for each tutorial must be approved by the instructor and the department chair. (F,W,S)

597. Individual Study for Master's and Ph.D. Examinations

(1-12) Staff

Prerequisites: consent of instructor and graduate adviser. No unit credit allowed toward advanced degree.

Instructor should be student's major professor or chair of the committee. (F,W,S)

598. Master's Thesis Research and Preparation

(1-12) Staff

Prerequisites: consent of instructor and graduate adviser. No unit credit allowed toward degree.

Master's thesis research and preparation. Instructor normally should be chair of the student's thesis committee. Only for research underlying the thesis, writing the thesis. (F,W,S)

599. Ph.D. Dissertation Preparation

(1-12) Staff

Prerequisites: consent of instructor and graduate adviser.

Instructor normally should be chair of the student's doctoral committee. Only for research underlying the dissertation, writing the dissertation. Limited to terminal preparation. (F,W,S)

Germanic, Oriental, and Slavic Languages and Literatures

Department of Germanic, Oriental, and Slavic Languages and Literatures, Phelps Hall 6206; Telephone (805) 961-2131. Department Chair: Gunther H. Gottschalk.

Faculty

Stuart Atkins, Ph.D., Yale University, Professor Emeritus
 Robert L. Backus, Ph.D., UC Berkeley, Professor (*Japanese language and literature*)
 Clifford A. Barraclough, M.A., University of Washington, Lecturer with Security of Employment (*German language and pedagogy*)
 Yolanda Broyles Gonzalez, Ph.D., Stanford University, Associate Professor (*dramatic literature and performance, comparative literature, oral traditions, Chicano studies*)
 Karen J. Campbell, Ph.D., Princeton University, Assistant Professor (*Middle Ages, 19th- and 20th-century literature, critical theory, history of narrative*)
 Richard C. Exner, Ph.D., University of Southern California, Professor (*19th- and 20th-century German literature, lyric poetry and essay, comparative literature*)
 James A. Fujii, Ph.D., University of Chicago, Assistant Professor (*Japanese language and modern Japanese literature*)
 Chauncey S. Goodrich, Ph.D., UC Berkeley, Professor Emeritus
 Gunther H. Gottschalk, Ph.D., University of Southern California, Professor (*textual analysis, modern syntax, computers in humanities, selected 20th-century authors*)
 Robert Hetzron, Ph.D., UC Los Angeles, Professor (*general, Semitic, Ethiopian, and Hungarian linguistics*)
 Gerhart Hoffmeister, Ph.D., University of Maryland, Professor (*baroque and romantic literature, comparative literature, German civilization*)
 William F. Holtrop, Ed.D., UC Los Angeles, Professor Emeritus
 Donald B. Johnson, Ph.D., UC Los Angeles, Professor (*Russian linguistics, structural literary criticism, Nabokov*)
 Albert Kaspin, Ph.D., UC Berkeley, Professor Emeritus
 Roselinde Konrad, Senior Lecturer Emerita
 Mstislav W. Kostruba, M.A., UC Santa Barbara, Lecturer with Security of Employment (*Russian and Serbo-Croatian languages, Russian poetry of the Golden Age*)
 Rolf N. Linn, Ph.D., UC Los Angeles, Professor Emeritus
 Torborg Lundell, Ph.D., UC Berkeley, Associate Professor (*selected Scandinavian authors, Swedish language, comparative literature, folklore and fairy tales*)
 Ursula R. Mahlendorf, Ph.D., Brown University, Professor (*expressionism, contemporary German literature, literature and psychology*)
 Keiko E. Mochizuki, B.A., Tokyo Women's Christian College, Senior Lecturer with Security (*Japanese language and culture*)
 Kenneth H. Pai, M.F.A., Iowa State University, Professor (*Mandarin language and modern Chinese literature*)

David V. Pugh, Ph.D., University of Toronto, Assistant Professor (*Age of Goethe*)
 Laurence A. Rickels, Ph.D., Princeton University, Associate Professor (*critical theory, the enlightenment, Age of Goethe, 20th-century German literature*)
 Harry Steinhauer, Ph.D., University of Toronto, Professor Emeritus
 Kuo Ch'ing Tu, Ph.D., Stanford University, Professor (*Chinese language and Chinese poetry*)
 John T. Waterman, Ph.D., UC Los Angeles, Professor Emeritus

Affiliated Faculty

Dolores M. Hsu, Ph.D. (Music)
 Joachim Remak, Ph.D. (History)

The Department of Germanic, Oriental, and Slavic Languages and Literatures offers programs of study leading to the B.A., M.A., and Ph.D. degrees in Germanic languages and literatures, the B.A. in Slavic languages and literatures, and the B.A. in Chinese. Students in each program acquire an appropriate linguistic background in lower-division courses, study the historical development of the language, and are exposed to the modern language in almost all upper-division classes. The department also offers courses in computer applications and computer-aided research and instruction. The curriculum for each program is designed to provide a thorough survey of the literature.

The department offers a one-year sequence in elementary Swedish and upper-division courses in translation in Scandinavian literature and Swedish film. Germanic languages and literatures majors may find the study of Swedish language and literature useful to their major.

Qualified students majoring in Germanic languages and literatures may spend their junior year at the University's Education Abroad Center at Goettingen. Slavic languages and literatures majors may compete for an opportunity to spend a semester at Leningrad University.

Three oriental languages are also taught within the department: Chinese, Japanese, and Hebrew. All are languages of great cultural and historical importance. Students in a number of disciplines, such as anthropology, art history, history, linguistics, philosophy, and political science may find their work greatly enhanced by the knowledge of one of these languages. A knowledge of these languages is essential for most students who plan to do advanced work in fields involving the Orient. Recent graduates have gone into diplomacy, museum work, and advanced study in preparation for university teaching.

These three languages correspond exactly to three of the University of California centers for Education Abroad: Hong Kong, Tokyo, and Jerusalem. Education Abroad Program participants may also study in Beijing and Taipei. Prior study of the relevant language is either required or recommended in every case.

At present there is a major program in Chinese only. The program provides the opportunity to study both modern Mandarin and Classical Chinese, the dominant literary medium until the twentieth century. All of the languages offered, however, may be pursued at both lower- and upper-division levels. An interdisciplinary approach to the study of China and Japan, including the languages, is possible through the Asian Studies major and graduate program, as noted earlier in the catalog.

Classes in oriental languages are usually relatively small, and students can expect to get maximum attention from instructors.

Undergraduate and graduate students are assigned advisers at the beginning of their studies;

all advisers keep posted office hours and are available by appointment as well.

After completing specific prerequisites, students with a bachelor's degree in Chinese, Germanic languages and literatures, or Slavic languages and literatures are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education and with their department adviser.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Chinese

Preparation for the major. Students may elect to emphasize either Mandarin or Classical Chinese. The Mandarin concentration requires at least three quarters of Classical Chinese; the Classical concentration requires at least three quarters of Mandarin. Completion of a concentration in either Mandarin or Classical Chinese is voluntary and will not be formally acknowledged on official transcripts or diplomas. Required: Chinese 1, 2, 3, 4, 5, 6 (for Mandarin concentration); Chinese 1, 2, 3, 101A-B-C (for Classical concentration); two quarters of Chinese 8A-B-C; History 80 or 86. Art History 6D and Religious Studies 20 and 21 are recommended. Students who have completed a more advanced course in a sequential language series will not then be permitted to take a course that is lower in the series.

Upper-division major. Forty-four units dealing with China, at least 28 of which must be in language courses appropriate to the concentration. Eight of the remaining units must be chosen from History 184A-B-C, 185A-B-P, 186A-B-C-P, 190A-B-C; the balance must be selected from Chinese 102A-B-C, 105, 110A-B, 111, 112, 115A-B, 116, 125, 132A-B, 137, and 145, depending on the concentration chosen. Recommended electives: Anthropology 138A-B, Art History 180, 182A-B, Eastern Languages 130, Philosophy 123A-B, Political Science 131, 136, Religious Studies 164A-B, 166A-B-C-D-E-F-G-H, Sociology 161.

Senior Honors Program

Students may request nomination for the senior honors program in Chinese by filing an application, or they may be nominated by the faculty. The minimum grade-point average for entrance to the program is 3.0 overall and 3.5 in the Chinese major. Candidates for the program must have completed at least 105 units, must expect to graduate within five quarters, and must have completed at least two upper-division courses in Chinese. Applications for the program and brochures describing requirements are available in the department office.

Bachelor of Arts — Germanic Languages and Literatures

Preparation for the major. Required, with grades of C or higher: German 1, 2, 3, 4, 5, 6, or equivalent levels in German 14, or placement beyond German 6 in the departmental placement examination. German 8A-B is required only for students in the German Studies concentration. History 4A-B-C is recommended. Note: students who have completed a more advanced course in a lower-division sequential series will not be permitted to take a course that is lower in the series.

Upper-division major. Completion of one of the following concentrations is required, but will not be formally acknowledged on official transcripts or diplomas.

Literature. This concentration is designed for students who are interested in a rigorous liberal arts education and for those who intend to pursue a graduate career in literary studies or library

science. Forty-four upper-division units are required, including German 100, 101A or B or C, any two quarters of the 115A-B-C series, and 120. (Native speakers of German should substitute 110A for 101A.) The remaining electives will be selected from upper-division German offerings, with no more than eight units each from literature in translation and language courses. Up to eight units of upper-division electives in related fields may be accepted into the major by petition.

A year of study abroad at a German-speaking institution of higher learning is highly recommended. Students who intend to pursue German at the graduate level are encouraged to supplement their major by selecting, in consultation with their department adviser, 20 units of courses from another literary, historical, or philosophical discipline.

German Studies. This concentration is designed especially for students who wish to enter such fields as political science, business, or economics, the teaching credential program or a master's program with a teaching emphasis. Forty-four upper-division units are required, including German 101A-B-C (native speakers of German should substitute German 110A-B for 101A-B-C), 107A-B-C, and one course from the 115A-B-C series. The remaining units are to be chosen from upper-division courses in German literature, culture, and language. No more than eight units of literature in translation and 16 units of language courses may be applied to the upper-division electives. Up to eight units of upper-division courses in German history, art, politics, Scandinavian and/or comparative literature, may be applied to the major by petition.

A year of study abroad at a German-speaking institution of higher learning is highly recommended. Students are encouraged to supplement their major by completing 20 or more upper-division units in another discipline such as Scandinavian political science, history, economics, one of the sciences, or engineering. Departmental courses in computer literacy are also recommended.

Education Abroad Program participants in either concentration should determine credit and unit limitations for their proposed work at Goettingen, in advance, from their advisers.

Senior Honors Program in German

Students may request nomination for the senior honors program by filing an application form, or they may be nominated by faculty. Qualifying requirements include an overall grade-point average of at least 3.0 with 3.5 in the Germanic languages and literatures major, and at least 105 units completed, including at least two upper-division courses in German. Descriptions of program requirements and applications may be obtained in the department office.

Bachelor of Arts—Slavic Languages and Literatures

Preparation for the major. Required, with grades of C or higher: Russian 1, 2, 3, 4, 5, 6, or equivalent as determined by departmental placement examination; Russian 8A-B-C. Recommended: History 4A-B-C and 135A-B-C. Students transferring from other institutions may be tested by examination. Students who have completed a more advanced course in a lower-division sequential series will not be permitted to take a course that is lower in the series.

Upper-division major. Forty upper-division units in Russian courses are required, including Russian 101A-B-C and 108; a minimum of eight units selected from Russian 102, 103, 105, 107, 121, 122, 123; and a minimum of eight units selected from Russian 115A-B, 125, and 161. German 118A-B is recommended.

UCSB participates in a national program through which sixty students each year spend a semester studying at Leningrad University in the USSR. Outstanding students have a good chance of being selected; financial assistance is available. Additional information is available in the department office.

GRADUATE PROGRAM

Master of Arts—Germanic Languages and Literatures

Admission

In addition to the general requirements of the Graduate Division, the following departmental requirements apply: (1) all applicants for admission must submit scores on the General Aptitude Test of the Graduate Record Examination, (2) applicants must have an undergraduate major in German literature or its equivalent. Candidates may be required to take undergraduate courses to make up deficiencies in preparation before or concurrent with beginning work in the master's program.

Degree Requirements

The department offers the M.A. degree under Plan 2 (without thesis) only. Two kinds of qualifying examinations are offered for the M.A. degree, one for students who do not wish to continue to the Ph.D. program and one for students who do wish to continue. An oral examination follows the written examination of continuing candidates, testing the student's literary-historical and interpretive skills in the chosen area of concentration. Consult the *Graduate Division Announcement* for additional details.

To satisfy the foreign language requirement for the M.A., the student must complete, with a grade of B or better, one upper-division literature course in a language other than German in which readings are substantially in the foreign language, or take a departmental examination. Courses taken to fulfill a foreign language requirement, or taken in preparation for meeting a foreign language requirement, will not be counted as part of a graduate student's academic course load.

The course in bibliography and methods (201A-B), or its equivalent, must be taken prior to, or concurrently with, other German graduate courses—preferably in the first year of residence. One four-unit course in another department may, with the approval of the graduate adviser, be counted toward the degree; no undergraduate courses may be counted toward the M.A. degree. Every student must teach a minimum of two quarters in elementary German, under supervision, at some time before being granted the M.A. degree. Particular attention is called to our graduate-level courses in computer-aided research, textual analysis, and language instruction.

Doctor of Philosophy—Germanic Languages and Literatures

Admission

In addition to the general requirements of the Graduate Division, the applicant must submit scores on the General Aptitude Test of the Graduate Record Examination. Students admitted to the Ph.D. program who have taken an M.A. degree at another institution will be evaluated during the third quarter of their residence to determine whether successful completion of their studies is likely.

Degree Requirements

After satisfactory completion of the M.A. equivalent, the student will be advised by the

graduate adviser, from quarter to quarter, about which courses are necessary for proper preparation for the doctoral qualifying examination. German 201A-B is not required of students who hold a master's degree in German, or its equivalent, from an American or foreign university.

To satisfy the foreign language requirement for the Ph.D., the student must complete, with a grade of B or better, one upper-division literature course in a language other than German in which the readings are substantially in the foreign language. The student may substitute for the second foreign language a departmental examination, or may complete course 3 of the regular sequence of a second foreign language with a grade of B or better, or may place into course 4 on the language placement examination. Courses taken to fulfill a foreign language requirement, or in preparation for meeting the foreign language requirement, will not be counted as part of a graduate student's academic course load.

Written examinations, followed by an oral examination during which the student presents detailed plans for dissertation research, test three of the following areas of concentration, chosen in consultation with the graduate adviser.

1. Literature of the Middle Ages, or History of the Language, or German Linguistics and Philology, or Literary Theory
2. Humanism and Reformation, Baroque and Enlightenment
3. Storm and Stress, German Classicism
4. Romanticism and Literary Movements of the Later Nineteenth Century, including Poetic Realism and Naturalism
5. German Literature of the Twentieth Century

No more than two areas of concentration may be selected from Areas 3, 4, and 5.

Upon passing the qualifying examination, the student will be advanced to candidacy. A dissertation must then be written, and defended in an oral examination.

Every student must teach a minimum of three quarters in elementary or intermediate German, under supervision, at some time before being granted the Ph.D. degree.

CHINESE COURSES

LOWER DIVISION

1. Elementary Modern Chinese

(5) Staff

The beginning course in Chinese. The student acquires a basic knowledge of the grammar, a limited general vocabulary, correct pronunciation, and an ability to read and understand simple texts. Weekly laboratory assignments support and enhance classroom learning. (F)

2. Elementary Modern Chinese

(5) Staff

Prerequisite: Chinese 1 or equivalent. Continuation of Chinese 1.

3. Elementary Modern Chinese

(5) Staff

Prerequisite: Chinese 2 or equivalent. Continuation of Chinese 2.

4. Intermediate Modern Chinese

(5) Staff

Prerequisite: Chinese 3 or equivalent. Continuation of Chinese 3.

5. Intermediate Modern Chinese

(5) Staff
Prerequisite: Chinese 4 or equivalent.
Continuation of Chinese 4.

6. Intermediate Modern Chinese

(5) Staff
Prerequisite: Chinese 5 or equivalent.
Continuation of Chinese 5.

7. Chinese Conversation

(2) Staff
Prerequisite: Chinese 3 or equivalent.
Introduction to Chinese conversation. (Offered summer session only.)

8A-B-C. Chinese Conversation

(2-2-2) Staff
Prerequisite: Chinese 3 or equivalent.
The course is designed to increase facility and naturalness of delivery in simple dialogue.

9. Introduction to Business Chinese

(4) Staff
Prerequisite: Chinese 5 or equivalent. This course is designed to be taken concurrently with, or instead of, Chinese 6.
An introduction to business vocabulary and correspondence.

UPPER DIVISION

101A-B-C. Elementary Classical Chinese

(4-4-4) Staff
Prerequisite: Chinese 3 or consent of instructor.
The readings will mainly consist in material from ancient prose works such as the *Chan-kuo ts'e* and *Han-fei tzu*. Students will be expected to acquire a grasp of the fundamentals of classical Chinese grammar and also some knowledge of ancient Chinese history and literature.

102A-B-C. Advanced Chinese Conversation

(2-2-2) Staff
Prerequisites: Chinese 8A-B or equivalent.
A course designed to provide an opportunity for upper-division students to continue a concentration on conversational Chinese.

105. Workshop in Chinese Translation

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Practical work in translation from a variety of Chinese sources depending on need. Emphasis on accuracy and rigor.

110A-B. Survey of Classical Chinese Literature

(4-4) Staff
Prerequisite: upper-division standing or consent of instructor.
Traditional literature from the *Shih Ching* to the Yuan dynasty. Readings, lectures, and discussion in English.

111. The Traditional Chinese Short Story

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
This course examines the beliefs and values of traditional China through the medium of the short story. Rhetorical techniques of the Chinese author will be discussed as evidence of the author's and the audience's exploration of these same concepts in practice.

112. Survey of Modern Chinese Literature

(4) Pai, Tu
Prerequisite: upper-division standing or consent of instructor.
The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures, and discussions in English.

115A. Imagism, Haiku, and Chinese Poetry

(4) Tu
Prerequisite: upper-division standing or consent of instructor.
A comprehensive study of the nature and principles of the *haiku* and of classical Chinese poetry, their influence on the western imagists, and the theoretical and experimental achievements of the major imagist poets in the development of modern English poetry. Taught in English.

115B. Imagism, Haiku, and Chinese Poetry

(4) Tu
Chinese 115A or consent of instructor. Chinese 115B is a continuation of Chinese 115A.
Selected readings in haiku and Chinese poetry. Taught in English.

116. A Comparative Approach to Chinese Poetry

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
The course is designed to enhance the appreciation and understanding of classical Chinese poetry, studied in English translation, through a comparative and analytical approach. All lectures, discussions, and readings will be in English. A knowledge of Chinese — or another foreign language — would be welcome but is not required.

120. Readings in Modern Social and Political Writings

(4) Pai, Tu
Prerequisite: Chinese 6 or equivalent.
Selected readings in the Chinese language on social and political writings.

122A-B-C. Advanced Modern Chinese

(4-4-4) Pai, Tu
Prerequisite: Chinese 6 or equivalent.
Advanced practice in grammar and composition.

124A-B. Readings in Modern Chinese Literature

(4-4) Pai, Tu
Prerequisite: Chinese 6 or equivalent.
Readings in the Chinese language in fiction, drama, and poetry written after 1919.

125. Business Chinese

(4) Staff
Prerequisites: Chinese 3 or equivalent; upper-division standing or consent of instructor.
A course intended to equip the properly qualified student to conduct business in modern Chinese. Emphasis will be place on using appropriate vocabulary in realistic situations.

130A-B-C. Intermediate Classical Chinese

(4-4-4) Staff
Prerequisite: Chinese 101C or equivalent.
Readings to be mainly in ancient prose, emphasizing the historical and philosophical literature, with grammatical and philological exegesis as needed.

132A. Selections from Classical Poetry

(4) Pai, Tu
Prerequisites: Chinese 130A-B-C or consent of instructor.
Selections pursuing the themes of love and death in Chinese poetry from the *Shih Ching* to modern times.

132B. Selections from Classical Poetry

(4) Pai, Tu
Prerequisite: Chinese 132A or consent of instructor.
Continuation of Chinese 132A.

133. Advanced Readings in Classical Prose

(2-4) Staff
Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of 12 units but only 4 units may be applied toward the major.
Readings in various periods and genres (history, philosophy, the essay, prose narrative).

134. Advanced Readings in Classical Poetry

(2-4) Staff
Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of 12 units but only 4 units may be applied toward the major.
Readings in the poetry of various periods before the twentieth century.

135. Advanced Readings in Modern Literature

(2-4) Staff
Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of 12 units but only 4 units may be applied toward the major.
Readings in creative and critical writings of the twentieth century.

136. Advanced Readings in Vernacular Literature

(2-4) Staff
Prerequisite: upper-division standing or consent of instructor. May be repeated for credit up to a maximum of 12 units but only 4 units may be applied toward the major.
Readings in novels of the Ming and Ch'ing periods.

137. Readings in Vernacular Drama

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
A course designed as an introduction to the vernacular drama of the Yuan, Ming, and Ch'ing dynasties in English translation. Due attention will be paid to dramatic conventions and historical allusions that must be understood.

145. Chinese Mythology

(4) Staff
Prerequisite: upper-division standing or consent of instructor. Knowledge of the Chinese language not required.
A study of the chief myths of ancient China through the Han dynasty (A.D. 200) using both literary and pictorial sources. Ancient religious cults will also be discussed as appropriate. Taught in English.

197. Senior Honors Project

(4-8) Staff
Prerequisites: open to senior majors only; consent of instructor. Students must have a 3.0 overall grade-point average and a 3.5 grade-point average in the major. May be repeated for a total of 12 units.
An independent study course (1 to 3 quarters) directed by a faculty member with a carefully

chosen topic and bibliography which will result in a documented project or a senior thesis.

198. Readings in Chinese

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Chinese. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated up to 12 units.

199. Independent Studies in Chinese

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Chinese. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Individual investigations in literary fields.

GRADUATE COURSES

201. Readings in Selected Texts

(2-4) Staff

Prerequisites: ability to read Chinese at graduate level; consent of instructor. Normally graduate status is required.

Course will center on readings of Chinese texts; type and period to depend on needs of students and wishes of instructor. Research methods to be taught as appropriate.

501. Apprentice Teaching

(2-4) Staff

Prerequisites: graduate standing and consent of instructor. Employment in this department as teaching assistant or linguistic informant. These units do not count toward the graduate degree. This course consists of supervised teaching practice in Chinese language.

596. Directed Reading and Research

(2-4) Staff

Prerequisites: graduate standing. Letter grade; minimum of two units per quarter. Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

597. Preparation for Comprehensive Examinations.

(1-6) Staff

Prerequisite: consent of graduate adviser. No unit credit allowed toward degree. Study for master's comprehensive examinations and Ph.D. examinations.

598. Master's Thesis Research and Preparation

(1-6) Staff

Prerequisites: graduate standing and consent of instructor. Maximum of 12 units total. No unit credit allowed toward master's degree. Instructor should be chair of the student's thesis committee.



In my research, I am mainly interested in the relationship between an author's insight into human psychology and the ways in which this insight is mediated in the author's art. In my most recent project on Romantic psychology, I have explored the German Romantics' narrative portrayals of various mental illnesses, their awareness of contemporary psychiatric theories and practices, and their understanding of the psychodynamics of healthy and pathological human interactions, which was vastly greater and more sensitive than that of Romantic psychology and psychiatry.

My teaching has always been driven by my research interests and I attempt to get students to read literary texts to increase their insight into socio-psychological problems, those depicted in texts as well as their own. Because of Central Europe's troubled socio-political history, the literature of the German-speaking countries is rich in the portrayal of all kinds of socio-psychological pathologies. Hence, my students and I read texts that explore such subjects as the origins of Nazism or depiction of the dynamics and consequences of child abuse.

As a teacher of German, I not only teach literature but also introduce students to the German language. I believe the study of a foreign language provides students with important intellectual tools for analyzing language as a phenomenon. It enhances their capacity to use and understand their own language and increases their attention to subtleties of meaning. Because meaning is what I study in literature, I find that the teaching of language and literature enrich each other.

Ursula R. Mahlendorf

Ursula R. Mahlendorf
Associate Dean
College of Letters and Science
Professor
Department of Germanic,
Oriental, and Slavic
Languages and Literatures

◀ Dr. Mahlendorf has been a Fulbright Fellow and received the Alumni Award for Excellence in Teaching in 1981. She also served for three years as associate director of the University of California Education Abroad Program. Her affiliations include professional societies in aesthetics and art criticism, applied psychoanalysis, and social psychiatry. An associate editor of the *American Journal of Social Psychiatry* and *American Imago*, she has published widely in both English- and German-language books and journals. She has also exhibited her original sculpture and woodcarving.

EASTERN LANGUAGES COURSE

130. The Scripts of Asia: The Origins of Writing

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

Introduction to the history and structural principles of Asian scripts developed in Egypt, Mesopotamia, Palestine and the Far East. The course exposes such principles as ideography, logography and alphabetography, and demonstrates the essential unity of writing. Open to students of Asian languages and other interested persons. Taught in English.

RELATED COURSES IN OTHER DEPARTMENTS

Arabic:

See Religious Studies 10A-F.

Chinese:

See Religious Studies 166F-H.

Sanskrit:

See Religious Studies 159A-L.

Persian:

See Religious Studies 157A-B-C.

GERMAN COURSES

LOWER DIVISION

1. Elementary German

(4) Staff

The beginning course in German. The student acquires the basic structure of the language, a limited general vocabulary, correct pronunciation, and an ability to read and understand simple cultural texts. Weekly laboratory assignments support and enhance classroom learning.

1G. Introduction to Reading German (for Graduate Students)

(3) Staff

Prerequisite: graduate standing in any field. May be repeated.

A brief introduction to the essentials of German grammar with emphasis on aspects of structure that are indispensable for reading skills (while deemphasizing those that are not). Reading texts are included from the beginning. (F; first part of the sequence German 2G and 3G.)

2. Elementary German

(4) Staff

Continuation of German 1.

2G. Introduction to Reading German (for Graduate Students)

(3) Staff
Prerequisites: graduate standing in any field; completion of German 1G or equivalent. May be repeated.
The course is a continuation of German 1G, using the same approach, with reading texts on a somewhat more complex level. (W)

3. Elementary German

(4) Staff
Continuation of German 2.

3G. Introduction to Reading German (for Graduate Students)

(3) Staff
Prerequisite: graduate standing in any field; completion of German 1G and 2G or equivalent. May be repeated.
The course is a continuation of German 1G and 2G, using the same approach, with reading texts on a more complex level. (S)

4. Intermediate German

(4) Staff
Continuation of German 3.

5. Intermediate German

(4) Staff
Continuation of German 4.

6. Intermediate German

(4) Staff
Continuation of German 5.

8A-B-C. German Conversation

(2-2-2) Staff
Prerequisites: German 3 or equivalent is prerequisite to A, German 4 or 8A is prerequisite to B, German 5 or 8B is prerequisite to C. Discussion, 2 hours.
Conversation course conducted entirely in German.

14M. Individualized Instruction

(1-12) Staff
Self-paced course in which students determine number of credit units they wish to complete and the level at which they wish to work. At least one credit unit must be completed. Maximum number of credit units which can be earned is 12. The inclusive level of instruction available is equivalent to the elementary courses German 1, 2, or 3. Final grade calculated on total number of units earned. The minimum one unit required must be completed no later than the last drop date (see summer session calendar) or a grade of F for one credit will be recorded (no Incompletes allowed). (summer session only)

33. Introduction to German Culture

(4) Staff
Essential aspects of the present-day cultural scene in Germany, Austria, and Switzerland; e.g., the theater, the film, other media, student protest and university reform, European and American infiltration of language and customs, etc. Taught with strong emphasis on audio-visual aids. A course designed for students enrolled in the lower-division language program. Taught in English.

40. Computers in Language and Literature

(4) Gottschalk
Introduction to the use of micro-and mini-computers in language and literature teaching and research. Development of model teaching programs at various levels. Programmed instruction. From teaching machines to computer assistance in the development of curricula, course texts, and exercises.

UPPER DIVISION

German majors please note that no more than eight units of German courses taught in English may be counted toward the major.

100. Introduction to the Study of German Literature

(4) Staff
Prerequisite: German 6 or equivalent.
Application of the techniques and methods used in literary criticism. The major tools for the study of literature. Texts used for analysis will vary upon the discretion of the instructor, but will include prose, poetry, and drama.

101A. Advanced German

(4) Staff
Prerequisite: German 6 or equivalent. This course may be taken simultaneously with or after German 101B or 101C.
An intensive reading course using advanced texts, mostly literary, to improve reading skills through a structural approach.

101B. Advanced German

(4) Staff
Prerequisite: German 6 or equivalent. This course may be taken simultaneously with German 101A.
A course in advanced structure of German aimed at improving oral and written expression as useful skills. Oral comprehension is also emphasized.

101C. Advanced German

(4) Staff
Prerequisite: German 101B or equivalent. This course may be taken simultaneously with German 101A.
A course in advanced structure of German aimed at improving oral and written expression as useful skills. Oral comprehension is also emphasized.

102A-B-C. Advanced German Conversation

(2-2-2) Barraclough
Prerequisite: German 6 and 8A-B-C or equivalent. The advanced conversation series gives students with a high degree of fluency an opportunity for discussing nonliterary issues. Active participation, progress in idiomatic expression, and individual presentations form the criteria for grading. Assignments and testing oral.

103. Phonetics and Phonology

(2) Gottschalk
Prerequisite: German 6 or equivalent. German 103 is strongly recommended before German 120.
Study of the articulatory basis of the sounds of German standard pronunciation, and a comparison with the English.

107A-B-C. History and Culture of German Speaking Countries

(4-4-4) Staff
Prerequisite: German 6 or equivalent.
A: A study of German cultural history from the great migrations to the age of Baroque.
B: From the Enlightenment to 1933.
C: From 1933 to the present, with focus on the contemporary political, cultural, and socioeconomic situation in the German Speaking countries, with an emphasis on the contrast between East and West Germany.
Taught in German.

108A-B. German History of Ideas

(4-4) Hoffmeister
Prerequisite: upper-division standing or consent of instructor.
German history of ideas, discussing major contributions of German-speaking philosophers, theologians, artists, and poets to European thought. Taught in English.
A: From Middle Ages to French Revolution.
B: From romantic idealism to the present.

110A-B-C. Stylistics

(4-4-4) Gottschalk
Prerequisites: German 6 or equivalent (for 110A); German 110A or equivalent (for 110B); German 110B or equivalent (for 110C).
A course in advanced composition, stressing refinements of idiom and style.

111A-B-C. Continuing German

(4-4-4) Staff
Prerequisites: at least German 101A or 101B or 101C; consent of instructor.
A study of finer points of German grammar, syntax, and vocabulary expansion, following the advanced level of German. Essay writing and oral practice stressed equally.

112A. The Language of Business

(4) Gottschalk
Prerequisite: upper-division standing or consent of instructor.
The course deals with specialized forms of present-day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language.

112B. The Language of Contracts and Law

(4) Gottschalk
Prerequisite: upper-division standing or consent of instructor.
The course deals with specialized forms of present-day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language.

112C. The Language of the Newsmedia

(4) Gottschalk
Prerequisite: upper-division standing or consent of instructor.
The course deals with specialized forms of present-day German with particular attention devoted to traditional, new, and just emerging terminology, to syntax, style, and usage as distinct from the everyday language.

115A-B-C. Survey of German Literature

(4-4-4) Staff
Prerequisite: German 6 or equivalent.
A: Survey of the literary movements of the twentieth century.
B: Survey of the literature of classicism and romanticism.
C: Survey of the literary movements of the nineteenth century.

116. Utterance and Silence in Paul Celan's Work

(4) Staff
Prerequisites: German 6 or equivalent; upper-division standing.
This course is devoted to discussing specific qualities of Paul Celan's work and his unique contribution to post-World War II German poetry. Close reading will be carried out with attention to usage of images, syntax, and vocabulary.

118A-B. Seminar on Computer-Assisted Textual Analysis

(4-4) Gottschalk

Prerequisites: upper-division standing or consent of instructor is prerequisite to 118A; German 118A or equivalent is prerequisite to 118B.

A: Interdisciplinary introduction for undergraduates in the humanities to the application of computer technology to the comparative analysis of literary or non-literary texts in English and foreign languages. Taught in English.
B: Continuation of German 118A.

120. History of the German Language

(4) Gottschalk

Prerequisite: German 6 or equivalent.

A history of the language from its Germanic origins to modern times with special reference to the cultural and social forces that shaped the standard literary language.

126. Lessing and the Enlightenment

(4) Staff

Prerequisite: German 6 or equivalent.

Studies in the literature of the German Enlightenment with a particular emphasis on theoretical and dramatic works of Lessing.

127A-B. Goethe

(4-4) Hoffmeister, Pugh

Prerequisites: German 6 or equivalent is prerequisite to German 127A. German 127A or consent of instructor is prerequisite to German 127B.

Goethe's life and major works with the exception of *Faust*, emphasizing his literary and intellectual achievement.

128. Goethe's Faust

(4) Exner, Mahlendorf, Pugh, Rickels

Prerequisite: German 6 or equivalent.

Detailed interpretation of Goethe's *Faust*, parts I and II, together with consideration of the Faust theme and Faust tradition in European literature and intellectual history, including Thomas Mann's *Dr. Faustus*.

129. East German Literature

(4) Exner, Gottschalk, Mahlendorf

Prerequisite: German 6 or equivalent.

A survey of East German literature. Readings, analysis, and interpretation of selected prose works which are varied from quarter to quarter. Lectures and readings in German.

130. Schiller

(4) Pugh

Prerequisite: German 6 or equivalent.

A survey of Schiller's development as illustrated in selected poems, dramas, and essays.

133. German Fairytales

(4) Staff

Prerequisite: German 6 or equivalent. Credit will not be granted for both German 133 and German 166.

Grimm's folktales, their social context, narrative techniques, recurring themes and characters; the literary fairytale with its various transformations of folk themes in the nineteenth and twentieth centuries. Lectures and readings in German.

134. Friedrich Nietzsche

(4) Rickels

Prerequisite: German 6 or equivalent.

A study of Nietzsche in modern German literature. Selected works of Nietzsche and of authors who bear the mark of Nietzsche's influence (including Georg, Hesse, Hofmannsthal, Kafka, and T. Mann) will be examined as to their form and place in the history of ideas. Readings in German.

135. Heine

(4) Pugh

Prerequisite: German 6 or equivalent.

An introduction to the writing against the background of Heine's life and times. Lectures and discussions, interpretation of texts. Intellectual and artistic development; his basic positions on religion, politics, and social problems.

136. Literature in German Film

(4) Gottschalk, Rickels

Prerequisite: German 6 or equivalent.

A study of the modern German cinema, and of its place in the culture and literature of the late twentieth century. Both the films and the literary works on which these films are based will be examined in the perspective of contemporary interpretations. Readings in German.

137. Current German Issues

(4) Gottschalk

Prerequisites: German 101A-B-C (any two). or upper-division standing.

The major issues in present-day West German cultural, social, and political life as presented from the German point of view in German language news media, journals, and literature. Taught in German; applicable to German studies concentration.

142. The Novella: The Nineteenth Century

(4) Exner, Hoffmeister

Prerequisite: German 6 or equivalent.

Shorter prose works by authors from romanticism to naturalism. Taught in German.

146. Nineteenth-Century Lyrics

(4) Exner, Hoffmeister

Prerequisite: German 6 or equivalent.

Major poets and poetic movements after Goethe's death and romanticism. Poets of the "Young Germany" movement, of poetic realism, and naturalism. Attention to questions of prosody. Taught in German.

147. German Immigration into the USA

(4) Hoffmeister

Prerequisite: upper-division standing or consent of instructor.

Studies the plight of the German farmers, craftsmen, and intellectuals in the old country from the eighteenth to the twentieth century which led to waves of emigration; the American dream; the patterns of settlement from east to west, the successes, integration, and the contributions of German speaking settlers, immigrants, and exiles over the last two centuries.

148. Nineteenth-Century Drama (Kleist to Hauptmann)

(4) Staff

Prerequisite: German 6 or equivalent.

The German drama from Kleist to Hauptmann.

151. Twentieth-Century Prose

(4) Exner, Gottschalk, Mahlendorf

Prerequisite: German 6 or equivalent.

Beginning with expressionism, studies of the development of German prose in our century. Particular emphasis on the two most recent decades.

153. Studies in Twentieth-Century German Literature

(4) Exner, Gottschalk, Mahlendorf

Prerequisite: German 6 or equivalent. May be repeated for a total of 20 units.

One or more major figures will be studied in each quarter. Thomas Mann, Rilke, Kafka, Brecht, Hesse, Hofmannstahl, Boll.

155. Twentieth-Century Drama (Postnaturalism)

(4) Mahlendorf

Prerequisite: German 6 or equivalent.

Theory, characteristics, and practices of expressionist drama, epic theater, theater of the absurd, theater of cruelty, and postepic theater. The dramatic work of such authors as the following will be discussed: Wedekind, Kaiser, Sternheim, Toller, Brecht, Durrenmatt, Frisch, Weiss, Grass.

157. Twentieth-Century Lyrics

(4) Exner, Mahlendorf

Prerequisite: German 6 or equivalent.

Major developments in lyric poetry beginning with expressionism; emphasis on post-World War II poets and their work.

158. Bertolt Brecht

(4) Broyles, Gottschalk, Mahlendorf

Prerequisite: German 6 or equivalent.

Plays, poetry, and prose and their social and political framework. Lectures and readings in German.

160D. Expressionism in the Film, in Art, and the Theater

(4) Mahlendorf and Walker

Prerequisite: upper-division standing. (Same course as Art History 160D.)

Treating the social theory, aesthetics, and artistic techniques of expressionism in art, literature, and film. Readings and lectures in English.

161. Classicism and Romanticism in German Literature

(4) Gottschalk, Hoffmeister

Prerequisite: upper-division standing or consent of instructor.

Selected readings in English translation from the classicists, romanticists, and realists of the eighteenth and nineteenth centuries.

162. Kafka, Mann, and their Age

(4) Exner, Gottschalk, Mahlendorf

Prerequisite: upper-division standing or consent of instructor.

Selected readings in English translation from German literature of the turn of the century to 1933, including such authors as Nietzsche, Mann, Kafka, Rilke, and Brecht.

163. Contemporary German Literature, 1945-Present

(4) Gottschalk, Mahlendorf

Prerequisite: upper-division standing or consent of instructor.

Selected readings in English translation from contemporary German literature, including such authors as Grass, Durrenmatt, Frisch, Weiss, Boll, etc.

164A-G. Great German Writers

(4) Exner, Gottschalk, Mahlendorf

Prerequisite: upper-division standing or consent of instructor. May be repeated to a maximum of 12 units provided the letter designation is different.

One or more major figures will be studied each quarter. A. Boll; B. Kleist and Buchner; C. Goethe; D. Thomas Mann; E. Kafka; F. Nietzsche in literature; G. Freud. Readings and lectures in English.

165. Youth Movements in German Literature and Culture

(4) Hoffmeister

Prerequisite: upper-division standing or consent of instructor.

Investigation of the recurrent phenomenon of youthful rebellion against the older generation; of the underlying causes in society, culture, literature; literature used as a vehicle of social protest; reactions by the establishment. Reading of masterpieces and cultural manifestoes. Storm and

stress to romanticism; Young Germany to 1968. Taught in English.

166. Romantic Fairytales

(4) Staff

Prerequisite: upper-division standing or consent of instructor. Credit will not be granted for both German 133 and German 166.

Grimm's folktales, their social context, narrative techniques, recurring themes and characters; the literary fairytale with its various transformations of folk themes in the course of the nineteenth and twentieth centuries. Lectures and readings in English.

167. Martin Luther and His Time

(4) Hoffmeister

Prerequisite: upper-division standing or consent of instructor.

Study of the religious revolution in Germany using the Italian Renaissance as a point of reference and placing the Reformation into the socioeconomical context of humanistic and antihumanistic forces. European masterpieces from Castiglione via the Bible to the history of Dr. Faustus. Conducted in English.

168. The Faust Tradition

(4) Exner, Mahlendorf, Rickels

Prerequisite: upper-division standing or consent of instructor.

The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann. Readings and lectures in English.

169. Mysticism

(4) Campbell

Prerequisite: upper-division standing or consent of instructor.

A historical overview of significant German religious mystical writing and secular literature showing the influence of mystical thought. Representative texts include medieval tracts (e.g., Meister Eckhart), romantic fiction (Novalis, E.T.S. Hoffman), and modern works (Hesse).

170. Romantic Women: Fiction and Reality

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

Portraits of women in romantic literature, such as Schlegel's *Lucinde* will be held against the lives of real women from different classes as they emerge from letters, journals, biographies, paintings in a time of revolutionary change and great intellectual ferment. Lectures and readings in English.

171. The Theme of Religious Faith

(4) Gottschalk

Prerequisite: upper-division standing or consent of instructor.

Comparative study of themes, styles, and structures in the shorter prose works of Kafka, Hesse, and Boll. Specifically, the problem of human isolation and of religious faith.

172. Hermann Hesse

(4) Gottschalk

Prerequisite: upper-division standing or consent of instructor.

Introduction to Hesse, the man and the artist. Study of the themes and structures of selected works ranging from his beginnings as a writer to his receipt of the Nobel Prize. Taught in English.

172S. Proseminar on Hesse

(4) Gottschalk

Prerequisites: German 172 or equivalent; consent of instructor.

Detailed analysis of Hesse's late prose; comparative studies; papers. Taught in English.

173. Epic Theater and Recent Trends in Drama

(4) Mahlendorf

Prerequisite: upper-division standing or consent of instructor.

The German theater today: plays, playwrights, and theatrical movements from the nineteenth century to post-World War II. Readings and lectures in English.

174. Literature and Psychology in the Nineteenth and Twentieth Centuries

(4) Mahlendorf

Prerequisite: upper-division standing or consent of instructor.

A study of selected nineteenth- and twentieth-century authors and their works from a depth-psychological perspective; e.g., Goethe, Schiller, Kleist, Mann, Hesse, Kafka, Brecht, Grass, Frisch. Lectures and readings in English.

174E. Technological Nightmares

(4) Mahlendorf

Prerequisite: upper-division standing only. Same course as History 174E.

The promise and the terror of technological progress as reflected in literary documents of the nineteenth and twentieth centuries; e.g., Mary Wollstonecraft-Shelley's *Frankenstein*, Meyrink's *Golem*, Kaiser's *Gas I*, Brecht's *Galileo*, Durrenmatt's *The Physicists*, Frisch's *Homo Faber*. These books will be related to the social history of technology. Taught in English.

175. Genius and Madness in Literature

(4) Mahlendorf

Prerequisite: upper-division standing or consent of instructor.

The treatment of creativity by German romantic and twentieth-century writers. Their theories of madness and of inspiration, their description of unusual states of consciousness, of risk, and suicide. Readings by such authors as E.T.A. Hoffmann, Kleist, Mann, and Grass.

176. Jung Proseminar

(4) Gottschalk

Prerequisite: upper-division standing or consent of instructor.

Introductory readings in Jung's writings and the application of Jungian concepts in literary analysis.

177. Law and Justice in Literature

(4) Exner

Prerequisite: upper-division standing or consent of instructor.

Various aspects of justice (human, divine, interpersonal, individual) and common "confrontations" over questions of law and justice (man/God, man/society, man against himself) are examined in the context of works by predominantly German authors, such as Kleist, Brecht, and Kafka.

178. The Prussian Tradition

(4) Hoffmeister

Prerequisite: upper-division standing or consent of instructor.

This course examines three interrelated problems; the legend of Prussia versus its reality; the conflict between the individual and authoritarian government; and the Prussian government system and Prussia as a state of mind. From Frederick the Great to the present; use of historical documents, political manifestoes, ideological sources, literary works, and movies. Taught in English.

179. Brecht

(4) Broyles, Gottschalk, Mahlendorf

Prerequisite: upper-division standing or consent of instructor.

Plays, poetry, and prose and their social and political framework. Lectures and readings in English.

180Z. German Cinema

4) Gottschalk, Mahlendorf, Rickels

Prerequisite: upper-division standing or consent of instructor.

An analysis of contemporary German film, the representation of metaphors of madness, alienation, isolation, technology, and the filmmaker as social critic. The New Film and its relationship to contemporary literary trends.

181. Nonsense Poetry in German and English

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

Playing with language, playing on words. Older nonsense poetry presupposes an unshakeable faith in the meaning of language, the modern variety springs from extreme skepticism in language. Edward Lear, Lewis Carroll, the Dadaists, Joyce, Beckett, Mayakovsky, concrete poetry.

182. Vampirism in German Literature and Beyond

(4) Rickels

Prerequisite: upper-division standing or consent of instructor.

From the earliest eye-witness accounts of vampire attacks in ancient Rome to the novels of Stoker and Ewers, the films of Dreyer and Browning, and the interpretations of Voltaire and Freud, bloodsucking has remained, in our culture, our premier and oldest legacy.

183. The "Other Germany" in Literature

(4) Broyles, Exner, Gottschalk

Prerequisite: upper-division standing or consent of instructor.

The course will study texts written in the German Democratic Republic and the Federal Republic of Germany, as well as elsewhere, which examine GDR as state, as society, as literary community. Readings from established authors such as Braun, Hacks, Hein, Kirsch, Kunert, Kunze, Muller, Wolf, and others. Taught in English.

184. Germanic Literature of the Heroic Age

(4) Campbell

Prerequisite: upper-division standing or consent of instructor.

Study of the major German and Scandinavian (Viking) heroic narratives of the Middle Ages. Overview of literary production from the Tribal Migrations to the thirteenth century, with special emphasis on the *Hildebrandslied*, the *Nibelungenlied*, the Dietrich cycle, and selected Eddic lays. Taught in English.

185. The German War Experience in Literature and Film

(4) Gottschalk

Prerequisite: upper-division standing or consent of instructor.

The effect of the experience of the horrors of total war on the young individual, both in civilian life and in the military, from Remarque to Fassbinder. Taught in English.

187. Strauss and Hofmannsthal

(4) Exner and Hsu

(Same course as Music 187.)

The collaboration between composer and poet. A study of their correspondence and of the operas, with special emphasis on *Electra*, *Rosenkavalier*, and *Ariadne*.

190. Special Topics in German

(1-4) Staff

Prerequisite: upper-division standing or consent of instructor. May be repeated for a maximum of 12 units but only 4 units may be applied to the major.

To be taken with the consent of the instructor and the department chair by students who have completed the German courses regularly offered, or the equivalent, in order to go on with further, more advanced study, according to their needs and interest.

192. Truth and Fiction: A Century of German History in Literature

(4) Exner, Remak

Prerequisite: History 4C or an upper-division course in modern European history or German literature. Same course as History 192.

German history, 1870 to 1971, as reflected in German literature. Partial list of authors to be read: Fontane, Grillparzer, George, Hofmannsthal, Roth, Plievier, Brecht, Hochhuth, Johnson.

194. Independent Computer Assisted Research

(1-4) Staff

Prerequisites: German 118A-B and consent of instructor.

Undergraduates who have met certain computer proficiency requirements can work on independent projects in this course.

197. Senior Honors Project

(4-8) Staff

Prerequisites: open to senior majors only; consent of instructor. Students must have a 3.0 overall grade-point average and a 3.5 grade-point average in the major. May be repeated twice.

An independent study course (one to three quarters) directed by a faculty member with a carefully chosen topic and bibliography which will result in a documented project or a senior thesis.

198. Readings in German

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in German. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May not be repeated.

199. Independent Studies in German

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in German. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Individual investigations in literary fields.

GRADUATE COURSES

German 201A-B or equivalent are prerequisite to all graduate courses and should therefore be taken during the first year of graduate studies. Exceptions are 216A-B-C, 217, 218, 219, 261A-B, 262B, 266, 279A, 297, and 594C.

201A-B. Bibliography and Methods of Criticism

(2-2) Campbell

A: Introduction to bibliographical and other research aids, with exercises. (S/U grading.)
B: Introductory survey of major critical methods and literary theories. (Letter grade.)

203A-B. Middle High German Literature

(4-4) Campbell

A: Survey of grammar; reading of simple texts.
B: Reading literary analysis of representative lyric and epic poems.

206. Seminar on the Picaresque

(4) Hoffmeister

Selections from picaresque works from both novels and plays, and authors such as Grimmelshausen, Reuter, Heine, Hauptmann, Brecht, Mann, Grass, and Boll.

207. Renaissance and Reformation

(4) Hoffmeister

Studies in the Italian and northern origins of the Renaissance and its transformation through Luther's Reformation; major writers in the vernacular from Ackermann to Dr. Faustus.

208A-B-C. Seminar on Seventeenth-Century Literature

(4-4-4) Hoffmeister

Students may take only two of the three options A, B or C.

Theory, European influences, and literary practices of the baroque poets either in (A) prose works, (B) lyrics, or (C) the drama.

209. Seminar on Eighteenth-Century Literature

(4) Hoffmeister

Studies in the intellectual and literary-historical background, with particular reference to influences from and parallel developments in England and France. The major writers treated will be Lessing and his contemporaries.

210. Seminar in Literary Theory and Criticism

(4) Rickels

An introduction to methods of literary investigation and their theoretical bases with practical application to specific literary texts and literary-historical topics.

211. Romantic Lyrics

(4) Hoffmeister

Poetic theory and interpretations of leading romantic poets from Novalis to Heine.

212. Introduction to Psychoanalytic Approaches to Literary Criticism

(4) Mahlendorf

Readings of some classic and contemporary texts of psychoanalytic literary criticism from Freud to Kohut (Freud, Reik, Winnicott, Lacan, Eissler, Holland, Kohut). Aims and limitations of psychoanalytic literary criticism, practical applications to contemporary literary texts of the psychoanalytic method.

216A-B-C. Computer Assisted Research

(4-4-4) Staff

Prerequisites: graduate standing.

This course is intended to introduce and develop computer methods of research within the terms of textual and information management efforts in foreign languages and literatures. Taught in English.

217. Computers in Language Teaching

(4) Gottschalk

Prerequisite: German 218.

Development of programs in computer assisted instruction in foreign languages and foreign language composition.

218. Textual Analysis

(4) Gottschalk

Prerequisite: graduate standing.

Interdisciplinary application of the computer to research in the humanities, specifically, the comparative textual analysis of German literary

texts in English and other foreign languages. Taught in English.

219. Concordances

(4) Gottschalk

Prerequisite: German 218 or equivalent.

Development of computer assisted concordances of literary texts using the Oxford and the Berkeley Concordance Programs. Evaluation of different types of concordances and their historical development. Taught in English.

220. History of the German Language

(4) Gottschalk

Prerequisite: German 120 or equivalent.

German in its Indo-European and Germanic setting, from its historical beginnings with emphasis upon the development of a standardized *Schriftsprache* in the sixteenth century.

226A-F. Studies in the Age of Goethe

(4) Exner, Hoffmeister, Rickels, Pugh

May be repeated for a maximum of 20 units.

Studies with special emphasis on one of the following: A: Sturm und Drang, B: Kleist, C: Holderlin, D: the Schlegels, E: the romantic novel, F: Lessing.

227A-B. Goethe

(4-4) Pugh

A: Reading and interpretation of works representative of one major period or aspect of Goethe's literary development.

B: Individual investigations of specialized topics related to the works of Goethe.

228. Schiller

(4) Pugh

Lectures and discussions of specific topics chosen from Schiller's plays and esthetic writing. Students present extensive oral reports.

229. Seminar on Schiller

(4) Pugh

Reading and discussion of some of Schiller's writing from a specific point of view. Extensive use of secondary sources. Students present oral reports and furnish a major paper based on their specific investigations.

230A-B-C. The Romantic Movement

(4-4-4) Hoffmeister, Pugh

Oral or written reports and examinations in German 230A, 230B, and 230C.

A: Early German romanticism, with emphasis on theoretical premises and their literary expression.
B: Romantic writing in the period of political nationalism and Restoration.
C: Goethe and European romanticism.

231. Seminar on Romanticism

(4) Hoffmeister

The special study of a topic chosen from, or related to, material covered in German 230A or 230B. Emphasis on recent developments in the investigation and theory of German romanticism.

232A-K. Studies in Nineteenth-Century Literature and Thought

(4) Exner, Gottschalk, Mahlendorf

May be repeated for a maximum of 36 units.

Studies in nineteenth-century literature and thought with special emphasis on one of the following major writers: A: Heine, B: Buchner, C: Stifter, D: Hebbel, E: Grillparzer, F: Keller, G: Meyer, H: Raabe, I: Fontane, J: Nietzsche, K: Schopenhauer.

235A-J. Studies in Twentieth-Century Literature

(4) Exner, Gottschalk, Mahlendorf, Rickels

May be repeated for a maximum of 36 units.

Studies in twentieth-century literature with special emphasis on one of the following major writers or movements: A: Hauptmann, B: Mann, C: Rilke, D:

Hofmannsthal, E: Kafka, F: Brecht, G: Benn, H: Expressionism, I: Hofmannsthal and the tragic, J: Hesse.

236. Contemporary Literature

(4) Exner, Gottschalk, Mahlendorf, Rickels
Intensive study of particular authors, genres, literary movements, and selected topics in German literature after World War II.

237. Turn of the Century

(4) Gottschalk
German literature from naturalism to expressionism.

240A-G. Studies in the Main Literary Genres

(4) Exner, Hoffmeister, Mahlendorf
May be repeated for a maximum of 24 units.
Studies in the main literary genres: A: Lyric, B: Drama, C: Novella, D: Novel, E: Essay, F: Tragedy and the tragic element, G: Comedy.

261A. Advanced German Grammar

(4) Gottschalk
Prerequisites: graduate standing and consent of instructor.

Systematic presentation of the more complex points of German grammar, special emphasis is on major difficulties of German syntax as encountered especially by the learner with English as the mother tongue. Intensive practice in the written application of grammar rules.

261B. Advanced Stylistics

(4) Gottschalk
Prerequisites: graduate standing and consent of instructor.

The course is designed to meet, through carefully planned exercises, the needs of those who have already acquired general proficiency in the language. It aims to develop natural fluency, both in writing and speaking, through emphasizing the differences between what is merely correct and what is German. Selected short tests will be analyzed and interpreted.

262B. German Phonetics

(4) Staff
Prerequisites: graduate standing and consent of instructor.

This course is designed to bring the students' German pronunciation to a high level of perfection and cover the following subjects: basic principles of articulatory phonetics, the pronunciation rules of Standard High German and important dialectal variations, the pedagogy of teaching pronunciation. Practical demonstrations are given in class in the language laboratory.

266. Germany Today

(4) Staff
Prerequisites: graduate standing and consent of instructor.

This course will focus on essential aspects of the present-day social, political, and cultural scene in the Federal Republic of Germany, e.g., the question of German identity, European and American infiltration of language and customs, the political parties, the Peace Movement, the media, student protest, and university reform.

279A. German Culture and Literature: Post-War German Literature

(4) Staff
Prerequisites: graduate standing and consent of instructor.

Studies in post-war German literature as represented by several major writers such as Boll, Grass, Hochhuth, and Walser. Special emphasis will be placed on the role of the writer in post-war society, and literature as a vehicle for criticism of political and social institutions.

297. Laboratory for Teaching Assistants

(2-4) Barraclough, Konrad
Units earned in this course, which is required of all teaching assistants, do not apply toward completion of the M.A. or Ph.D. requirement.
Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants.

594C. Independent Computer Assisted Research

(1-4) Staff
Prerequisites: graduate standing and consent of instructor.

Students who have met certain computer proficiency requirements can work independently on special computer assisted research projects through this course.

596. Directed Reading and Research

(2-4) Staff
Prerequisites: graduate standing; consent of instructor, graduate adviser and department chair. Letter grade only.

Individualized instruction. A written proposal must be approved by department chair, to include a description of the course content and a reading list.

597. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff
Prerequisites: graduate standing; consent of graduate adviser. No unit credit allowed toward advanced degree(s). Enrollment limited to 12 units per examination.

Instructor should normally be the student's major professor or chair of the doctoral committee. Enrollment must be approved by graduate adviser.

599. Ph.D. Dissertation Research and Preparation

(2-8) Staff
Prerequisites: advancement to candidacy; consent of graduate adviser. S/U grading only.
Only for preparation of the doctoral dissertation. Instructor should be the chair of the student's Ph.D. committee.

RELATED COURSES IN EDUCATION

Education SG 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of German

(3-5) Staff
Teaching German language and literature on the high school and college levels. Presentation and content of linguistic and literary courses. A professional course in methods.

Education SG 392. Student Teaching: German

(3-9) Staff
Prerequisites: German 101A-B or the equivalent and Education SG 390. May be repeated.
Required of candidates for a teaching credential with a major in German.

Education SG 393. Problem Seminar: Teaching German

(1) Konrad
Prerequisite: concurrent enrollment Education SG 392. May be repeated.
Discussion of problems in the teaching of German.

Education SG 395. Problems in Morphology and Syntax

(4) Staff
Prerequisite: restricted to students in the German credential program.
Analysis of the more complex morphological and syntactical aspects of German, with emphasis on their role within foreign language teaching.

HEBREW COURSES

LOWER DIVISION

1. Elementary Hebrew

(4) Hetzron
The beginning course in Hebrew. Starting with the study of the alphabet the student is initiated into the rudiments of the language. Basic grammar and vocabulary.

2. Elementary Hebrew

(4) Hetzron
Prerequisite: Hebrew 1 or equivalent.
Continuation of Hebrew 1.

3. Elementary Hebrew

(4) Hetzron
Prerequisite: Hebrew 2 or equivalent.
Continuation of Hebrew 2.

UPPER DIVISION

110. Hebrew Literature in Translation

(4) Hetzron
Prerequisite: upper-division standing or consent of instructor.

The study of a Hebrew writer or of a period of Hebrew literature. Students are given individual assignments to study the period involved and other works by the author or his/her contemporaries. The instructor provides a summary of those features that are lost in translation.

115A-B-C. Readings in Israeli Hebrew

(4-4-4) Hetzron
Prerequisite: Hebrew 3 or equivalent.
Intermediate and advanced readings in Israeli Hebrew; grammar review and conversation exercises.

120A-B-C. Introductory Biblical Hebrew

(2-2-2) Hetzron
Prerequisites: Hebrew 3 or equivalent and consent of instructor.
Grammatical features of biblical Hebrew; elementary reading in the Hebrew Bible.

199. Independent Studies in Hebrew

(1-5) Hetzron
Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Hebrew. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

JAPANESE COURSES

LOWER DIVISION

1. Elementary Japanese

(5) Staff

The beginning course in Japanese. The student acquires a basic knowledge of the grammar, a limited general vocabulary, correct pronunciation, and an ability to read and understand simple texts. Weekly laboratory assignments support and enhance classroom learning.

2. Elementary Japanese

(5) Staff

Prerequisite: Japanese 1 or equivalent.
Continuation of Japanese 1.

2A. The System of Kanji

(1) Backus

Prerequisites: Japanese 1 and consent of instructor.

First quarter of a two-quarter course (the second being Japanese 3A) running concurrently with Japanese 2 and 3 for the purpose of facilitating the learning of *Kanji*, or Chinese characters used in the Japanese script, by elucidating the principles of *Kanji* structure and tracing the graphic history of representative characters.

3. Elementary Japanese

(5) Staff

Prerequisite: Japanese 2 or equivalent.
Continuation of Japanese 2.

3A. The System of Kanji

(1) Backus

Prerequisites: Japanese 2A and consent of instructor.

Second quarter of a two-quarter course (the first being Japanese 2A) running concurrently with Japanese 2 and 3 for the purpose of facilitating the learning of *Kanji*, or Chinese characters used in the Japanese script, by elucidating the principles of *Kanji* structure and tracing the graphic history of representative characters.

4. Intermediate Japanese

(4) Staff

Prerequisite: Japanese 3 or equivalent.
Continuation of Japanese 3.

5. Intermediate Japanese

(4) Staff

Prerequisite: Japanese 4 or equivalent.
Continuation of Japanese 4.

6. Intermediate Japanese

(4) Staff

Prerequisite: Japanese 5 or equivalent.
Continuation of Japanese 5.

7. Introduction to Business Japanese

(4) Staff

Prerequisite: Japanese 5 or equivalent. This course is designed to be taken concurrently with, or instead of, Japanese 6.

Introduction to business vocabulary and writing of correspondence. Japanese business customs and practices are discussed. First two hours for listening and speaking and the next two for reading and writing.

8A-B-C. Japanese Conversation

(2-2-2) Mochizuki

Prerequisite: Japanese 3 or equivalent.

The course is designed to increase facility and naturalness of delivery in simple dialogue.

32. Introduction to Japan

(4) Mochizuki

A topical survey of modern Japan covering material on the society and the culture. This course is intended to satisfy casual interest in Japan as well as to impart a basic knowledge relative to specialized upper-division courses on Japan given in various departments.

UPPER DIVISION

101. The Structure of Classical Japanese

(4) Backus

Prerequisite: Japanese 5 or equivalent or consent of instructor.

An introduction to the classical language through selections from Heian period literature.

110A-B. Survey of Premodern Japanese Literature

(4-4) Staff

Prerequisite: upper-division standing or consent of instructor.

A survey of Japanese literature from its beginning to 1867. Readings, lectures, and discussions in English.

112. Survey of Modern Japanese Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

A survey of Japanese literature after contact with the West, from 1868 to the present. Readings, lectures, and discussions in English.

113A-B-C. Topics in Modern Japanese Literature

(4-4-4) Fujii

Prerequisite: upper-division standing or consent of instructor.

Exploration of key issues underlying modern Japanese literature. Courses are organized around the following topics: Concepts of Self in Modern Japanese Narrative Form, Literature and the Modern Japanese State, Urban-Rural Tension in Modern Japanese Literature. Taught in English.

120A-B-C. Readings and Composition in Modern Japanese

(4-4-4) Staff

Prerequisite: Japanese 6 or equivalent.

An introduction to informal, popular, and relatively easy expository styles of writing, with emphasis on assimilation of grammatical forms and expansion of vocabulary through reading, writing, and talking.

130A-B-C. Advanced Readings in Modern Japanese

(4-4-4) Staff

Prerequisite: Japanese 6 or equivalent; or consent of instructor.

An exploration of expository, journalistic, and literary styles of writing.

135. Advanced Special Readings

(2-4) Staff

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of 12 units.

The reading material, which may be on almost any subject and changes each time the course is given, is selected for the problems it presents, either because of an unusual style (dialectical, archaic, or figurative), or because of a specialized vocabulary such as religious, philosophical, or scientific.

140. Topics in Japanese Culture

(4) Backus

Prerequisite: upper-division standing or consent of instructor.

Exploration and definition through reading in English of interesting themes that have persisted in Japanese culture to the present.

150. Survey of Modern Japanese Society

(4) Mochizuki

Prerequisite: upper-division standing or consent of instructor.

Understanding Japanese society and culture through reading and films. The course will introduce the set of Japanese values, habits, and heritage. The discussion centers around the conflict between traditional and modern patterns of thoughts and philosophy in human relations and social organizations. Taught in English.

198. Readings in Japanese

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Japanese. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated up to 12 units.

Guided reading in Japanese on a subject not covered in the regularly offered courses.

199. Independent Studies in Japanese

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Japanese. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Individual investigations in literary fields.

GRADUATE COURSES

201. Readings in Selected Texts

(2-4) Staff

Prerequisites: ability to read Japanese at graduate level; consent of instructor. Normally graduate status is required.

Course will center on readings of Japanese texts; type and period to depend on needs of students and wishes of instructor. Research methods to be taught as appropriate.

501. Apprentice Teaching

(2-4) Staff

Prerequisites: graduate standing and consent of instructor. Employment in this department as teaching assistant or linguistic informant. These units do not count toward the graduate degree. This course consists of supervised teaching practice in Japanese language.

596. Directed Reading and Research

(2-4) Staff

Prerequisites: graduate standing. Letter grade; minimum of two units per quarter.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and files with Graduate Division.

597. Preparation for Comprehensive Examinations

(1-6) Staff

Prerequisite: consent of graduate adviser. No unit credit allowed toward degree.

Study for master's comprehensive examinations and Ph.D. examinations.

598. Master’s Thesis Research and Preparation

(1-6) Staff
Prerequisite: graduate standing. S/U grading. No unit credit allowed toward degree.
For research underlying the thesis, writing the thesis. Instructor should be the chair of the student’s thesis committee.

RUSSIAN COURSES

LOWER DIVISION

1. Elementary Russian

(4) Staff
The beginning course in Russian. The student acquires the basic structure of the language, a limited general vocabulary, correct pronunciation, and an ability to read and understand simple cultural texts. Weekly laboratory assignments support an enhance classroom learning.

1S. Introduction to Reading Russian

(4) Kostruba
Russian course tailored to individual needs of students: A: Reading and writing Russian for graduate students. B: Russian grammar, with emphasis on reading and writing for beginners. C: Preparation to enter advanced course in Russian for those with previous knowledge (including high school students).

2. Elementary Russian

(4) Magee
Prerequisite: Russian 1 or equivalent.
Continuation of Russian 1.

3. Elementary Russian

(4) Magee
Prerequisite: Russian 2 or equivalent.
Continuation of Russian 2.

4. Intermediate Russian

(4) Magee
Prerequisite: Russian 3 or equivalent.
Continuation of Russian 3.

5. Intermediate Russian

(4) Magee
Prerequisite: Russian 4 or equivalent.
Continuation of Russian 4.

6. Intermediate Russian

(4) Magee
Prerequisite: Russian 5 or equivalent.
Continuation of Russian 5.

8A-B-C. Conversation and Composition

(2-2-2) Kostruba
Prerequisites: Russian 1 and 2. To be taken concurrently with Russian 3, 4, 5, or 6.
Practice in speaking and writing Russian. Conversation, discussion, and composition on assigned topics.

11A-B. Russian for Graduate Students

(4-4) Staff
The first quarter will present the elements of Russian grammar and word formation using short illustrative prose selections. The second quarter will complete the presentation of grammar and practice techniques of translating more specialized texts.

33. Russia—From Yesteryear to the Present

(4) Kostruba
Survey of geographical, historical, ethnological, political, and literary background of the largest

country in the world with emphasis on the milestones in each of the above-mentioned fields. Lectures in English; some slides and films. Five quizzes and a nonessay final examination.

UPPER DIVISION

101A-B-C. Advanced Russian: Third Year

(4-4-4) Kostruba
Prerequisite: Russian 6 or consent of instructor.
Introduction to extensive reading to Russian prose with discussion and composition in Russian.

102. Russian Composition

(4) Staff
Prerequisite: Russian 6 or equivalent. May be repeated once for credit.
Designed to help develop writing skills in Russian.

103. Chekhov’s Short Stories

(4) Staff
Prerequisite: Russian 6 or equivalent.
Reading and analysis of a sampling of works from Chekhov’s various periods. Reading, discussion, and composition in Russian.

105. Pushkin

(4) Staff
Prerequisite: Russian 6 or equivalent.
Reading of important works in the original; discussion and composition. Conducted in Russian.

107. The Russian Nabokov

(4) Johnson
Prerequisite: Russian 6 or equivalent.
A study of Nabokov’s Russian writings with primary focus on the short stories, poetry, and plays.

108. The Russian Language: Morphology

(4) Johnson
Prerequisite: Russian 6 or equivalent.
A study of Russian word formation. Primary focus is on the verb system.

115A. Russian Literature through the Nineteenth Century

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Begins with the medieval period, traces the development of Russian literature through classicism and romanticism and into the age of realism to mid-nineteenth century. Reading and discussion in English of works by Pushkin, Lermontov, Gogol, Turgenev, and others.

115B. Russian Literature through the Nineteenth Century

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
The Russian novel and afterward: a discussion of literature and thought in the second half of the nineteenth century. Works by Dostoevsky, Chekhov, and others. Readings and lectures in English.

120. Russian Drama

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Plays from the classic, romantic, and realistic periods; Chekhov’s innovative works, as well as drama representative of various trends before and after 1917. Readings and discussion in English.

121. The Russian Short Story

(4) Staff
Prerequisite: Russian 6 or equivalent. May be repeated for eight units total.
Analysis and discussion of various forms of the short story by Russian Writers.

122. The Russian Novella

(4) Staff
Prerequisite: Russian 6 or equivalent. May be repeated for eight units total.
In Russian literature the novella is a genre quite distinct from the short story and the novel. All major writers of the nineteenth and twentieth centuries created important works in this form, so that a vast field for exploration and examination exists for such a genre course.

123. Russian Poetry of the Golden Age

(4) Kostruba
Prerequisite: Russian 6 or equivalent.
A study of representative works of the major nineteenth-century poets (e.g., Pushkin, Lermontov, Tyutchev, Fet, Nekrasov), with attention to each work’s relationship to the history of the development of Russian poetry generally and its place in the author’s career. All work to be done in Russian.

125. Twentieth-Century Russian Literature

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Avant-grade experimentation before and immediately following the Revolution, Stalin’s “socialist realism,” the brief “thaw” of the Krushchev years, and literature of dissent. Works by Mayakovsky, Pilnyak, Pasternak, and Solzhenitsyn, among others. Lectures and readings in English.

127. The Silver Age

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
Poetry, prose, and drama of the decadents, symbolists, and post-symbolists. The aesthetic and ethical ideals of the generation following the critical realists. Works by Briusov, Balmont, Blok, Bely, Kuzmin, Akhmatova, Mandelstam, and others. Lectures and readings in English.

130. Dostoevsky

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
A study of Dostoevsky’s principal novels and short stories in their historical and cultural contexts. Lectures and readings in English.

131. Tolstoy

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
A study of Tolstoy and his major novels and important shorter fiction. Lectures and readings in English.

133. Chekhov

(4) Staff
Prerequisite: upper-division standing or consent of instructor.
A study of Chekhov’s development as a writer. Analysis and discussion of his short stories, long stories, and plays. Lectures and readings in English.

134. Nabokov

(4) Johnson
Prerequisite: upper-division standing or consent of instructor.
A study of Nabokov’s novels with particular attention to structure and style. The novel as parody

and game playing. Lectures and readings in English.

140. Problems in Translation

(4) Staff

Prerequisite: Russian 6 or equivalent.

Techniques of translating literary materials, both from English into Russian and from Russian into English.

150. Russian Folk Literature

(4) Staff

Prerequisite: upper-division standing or consent of instructor.

The myths, epics, folktales, folk lyrics, and other oral forms. Lectures and readings in English.

161. Writings of Russian Dissidents

(4) Staff

Perequisite: upper-division standing or consent of instructor.

Survey and analysis of the literary and polemical writings of dissenters in Russia, with emphasis on the most recent period. Genres include prose, poetry, memoir, and essay by Tolstoy, Zamyatiu, Brodsky, Solzhenitsyn, Amalrik, and others.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisites: upper-division standing; consent of the instructor and the department chair. May be repeated, but only four units may count toward the major. Enrollment limited to 12 students or less.

Designed to meet special curricular problems.

197. Senior Thesis in Russian

(4) Staff

Prerequisites: senior standing; 3.0 grade-point average.

Selected seniors may pursue individual projects with close tutorial supervision of faculty advisers. The reading and a substantial essay to be in Russian.

198. Readings in Russian

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Russian. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated up to six units.

Guided reading on a subject not covered in the regularly offered courses.

199. Independent Studies in Russian

(1-5) Staff

Prerequisites: student must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Russian. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

GRADUATE COURSES

294. Literary Structuralism

(4) Johnson

Prerequisite: graduate standing.

Seminar on literary structuralism. Lectures and texts in English. Theoretical orientation of the course is primarily, but not exclusively, that of Russian, Prague School, and Anglo-American structuralism. Major focus is application of structuralist analytic techniques to individual works of literature.

596. Directed Reading and Research

(2-4) Staff

Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in Russian 596. Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

SCANDINAVIAN COURSES

UPPER DIVISION

137. Scandinavian Folklore and Folk Tale

(4) Lundell

Prerequisite: upper-division standing or consent of instructor.

Scandinavian folklore and tale in translation.

138. Scandinavian Drama

(4) Lundell

Prerequisite: upper-division standing or consent of instructor.

Drama in Scandinavian literature in translation.

139. Scandinavian Prose

(4) Lundell

Prerequisite: upper-division standing or consent of instructor.

Prose in Scandinavian literature in translation.

140. Swedish Film

(4) Lundell

Prerequisite: upper-division standing or consent of instructor.

Study of the development of Swedish film from the classical silent period through Ingmar Bergman and the post-Bergman directors. Study of aesthetic and cultural aspects. Swedish cinema related to world cinema. Stiller, Sjostrom, Sjöberg, Bergman, Zetterling, Sjöman, Troell. Taught in English.

presents directors preceding the Bergman era and contemporary attempts to break away from the Bergman tradition. Readings and lectures in English.

145. Ingmar Bergman

(4) Lundell

Prerequisite: upper-division standing or consent of instructor.

Study in depth of Swedish film director Ingmar Bergman.

150A-D. Great Scandinavian Writers

(4) Lundell

Prerequisite: upper-division standing or consent of instructor. May be repeated to a maximum of 16 units provided the letter designation is different.

One major figure will be studied each quarter. A. Isak Dinesen; B. August Strindberg, C. Par Lagerkvist, D. Hans Christian Andersen. Readings and lectures in English.

190. Special Topics in Scandinavian

(1-4) Lundell

Prerequisites: upper-division standing and consent of instructor. May be repeated for credit to a maximum of 12 units.

To be taken with the consent of the instructor and the departmental chair by students who have completed the Scandinavian courses regularly offered, or the equivalent, in order to go on with further, more advanced study, according to their needs and interest.

198. Readings in Scandinavian

(1-5) Lundell

Prerequisites: consent of instructor. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Scandinavian. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated for credit to a maximum of 12 units.

Individual readings in Scandinavian language and/or literature in the student's field of interest.

GRADUATE COURSES

503. Tools of Research in Scandinavian Literature

(2-4) Lundell

Prerequisites: graduate standing and consent of instructor.

Auxiliaries to the study of Scandinavian literature including poetics, advanced literary theory, textual criticism, biographical tools, and other related issues.

596. Directed Reading and Research

(2-12) Lundell

Prerequisite: graduate standing only. Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in Scandinavian 596.

Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

SEMITIC LANGUAGE COURSES

UPPER DIVISION

120A-B-C. Historical Semitic Linguistics

(3-3-3) Hetzron

Prerequisite: upper-division or consent of instructor.

An introduction to the history of the Semitic languages, reconstruction of Proto-Semitic step-by-step regressively by confronting all the Semitic languages.

A: Phonemic system and phonetic development.

B: Morphology and syntax.

C: Specific problems in individual groups.

190. Special Topics in Hebrew

(3-5) Hetzron

Prerequisite: Hebrew 115C or equivalent. May be repeated for credit to a maximum of 12 units.

To be taken with the consent of the instructor and the departmental chair by students who have completed the Hebrew courses regularly offered, or the equivalent, to go on with further, more advanced study, according to their needs and interest.

199. Independent Studies in Semitic Languages

(1-5) Hetzron

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Semitic languages. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Independent investigations in literary fields.

GRADUATE COURSE

596. Directed Reading and Research
(2-4) Hetzron
Prerequisites: graduate standing only. Letter grade; minimum of two units per quarter.
Individual tutorial. A written proposal for each tutorial must be approved by department chair and filed with Graduate Division.

SWEDISH COURSES

LOWER DIVISION

1. Elementary Swedish
(4) Lundell
Beginner's course. (F)

2. Elementary Swedish
(4) Lundell
Continuation of Swedish 1.

3. Elementary Swedish
(4) Lundell
Continuation of Swedish 2.

UPPER DIVISION

120. Readings in Contemporary Prose Texts
(4) Lundell
Prerequisite: Swedish 3 or equivalent, or consent of instructor.
Readings selected from fiction and / or non-fiction according to student interest. Grammar.

194. Group Studies
(1-4) Lundell
Prerequisite: Swedish 3 or equivalent; may be repeated but only for a total of 12 units.
Designed to meet special curricular problems.

199. Independent Studies in Swedish
(1-5) Lundell
Prerequisites: consent of instructor. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Swedish. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated for credit to a maximum of 12 units.
Individual investigations in fields related to Swedish culture.

GRADUATE COURSES

501. Apprentice Teaching
(2-4) Lundell
Prerequisites: graduate standing, consent of instructor, and employment in this department as teaching assistant in Swedish.
This course consists of supervised teaching practice in Swedish language. These units do not count toward any graduate major.

FOREIGN LITERATURE AND FILM TAUGHT IN ENGLISH

Literature courses for which no knowledge of a foreign language is required. See course descriptions above.

CHINESE

110A-B. Survey of Classical Chinese Literature
(4-4) Goodrich

111. The Traditional Chinese Short Story
(4) Staff

112. Survey of Modern Chinese Literature
(4) Pai, Tu

115A-B. Imagism, Haiku, and Chinese Poetry
(4) Tu

145. Chinese Mythology
(4) Staff

GERMAN

108A-B. German Intellectual History
(4-4) Hoffmeister

147. German Immigration
(4) Hoffmeister

160D. Expressionism in the Film, in Art, and the Theater
(4) Mahlendorf and Walker

161. Classicism and Romanticism in German Literature
(4) Gottschalk, Hoffmeister

162. Kafka, Mann, and Their Age
(4) Exner, Gottschalk, Mahlendorf

163. Contemporary German Literature, 1945-Present
(4) Mahlendorf, Exner, Gottschalk

164A-F. Great German Writers
(4) Exner, Gottschalk, Mahlendorf

165. Youth Movements in German Literature and Culture
(4) Hoffmeister

166. Romantic Fairytales
(4) Staff

167. Martin Luther and His Time
(4) Hoffmeister

168. The Faust Tradition
(4) Exner, Mahlendorf, Rickles

169. Mysticism
(4) Campbell

171. The Theme of Religious Faith
(4) Gottschalk

172. Hermann Hesse
(4) Gottschalk

172S. Proseminar on Hesse
(4) Gottschalk

173. Epic Theater and Recent Trends in Drama
(4) Mahlendorf

174. Literature and Psychology in the Nineteenth and Twentieth Centuries
(4) Mahlendorf

174E. Technological Nightmares
(4) Mahlendorf

175. Genius and Madness in Literature
(4) Mahlendorf

176. Jung Proseminar
(4) Gottschalk

177. Law and Justice in Literature
(4) Exner

178. The Prussian Tradition
(4) Hoffmeister

179. Brecht
(4) Gottschalk, Mahlendorf

180Z. German Cinema
(4) Mahlendorf

181. Nonsense Poetry in German and English
(4) Staff

187. Strauss and Hofmannsthal
(4) Exner and Hsu

192. Truth and Fiction: A Century of German History in Literature
(4) Exner, Remak

HEBREW

110. Hebrew Literature in Translation
(4) Hetzron

JAPANESE

110A-B. Survey of Premodern Japanese Literature
(4-4) Staff

112. Survey of Modern Japanese Literature
(4) Staff

140. Topics in Japanese Culture
(4) Backus

150. Japanese Society in Films
(4) Mochizuki

RUSSIAN

115A-B. Russian Literature through the Nineteenth Century
(4-4) Staff

120. Russian Drama
(4) Staff

125. Twentieth-Century Russian Literature
(4) Staff

127. The Silver Age
(4) Staff

130. Dostoevsky
(4) Staff

131. Tolstoy
(4) Staff

133. Chekhov
(4) Staff

134. Nabokov
(4) Johnson

150. Russian Folk Literature
(4) Staff

161. Writings of Russian Dissidents
(4) Staff

SCANDINAVIAN

137. Scandinavian Myth and Tale
(4) Lundell

138. Scandinavian Drama
(4) Lundell

139. Scandinavian Prose
(4) Lundell

140. Swedish Film
(4) Lundell

145. Ingmar Bergman
(4) Lundell

150A-D. Great Scandinavian Writers
(4) Lundell

Global Peace and Security

Studies in Global Peace and Security, South Hall 6722; Telephone (805) 961-3252. Advisory Committee Chair: John A. Ernest

Advisory Committee

Luc Anselen, Ph.D. (Geography)
Lawrence Badash, Ph.D. (History)
Valerie Bencivenga, Ph.D. (Economics)
Daniel B. Botkin, Ph.D. (Biology/Environmental Studies)
Biliana Cincin-Sain, Ph.D. (Political Science)
Richard W. Comstock, Ph.D. (Religious Studies)
Willis Copeland, Ph.D. (Education)
John A. Ernest, Ph.D. (Mathematics)
Jose Fulco, Ph.D. (Physics)
David Gold, Ph.D. (Sociology)
Wolfram Hanrieder, Ph.D. (Political Science)
Walter Kohn, Ph.D. (Physics)
Robert C. Noel, Ph.D. (Political Science)
Cedric Robinson, Ph.D. (Political Science, Center for Black Studies)

Students can complement their major with an interdisciplinary selection of courses relating to international conflicts, the arms race and nuclear war, and conditions for global peace and security. Listed below are a primary and secondary set of courses. Each student in this program will select, in consultation with a member of the advisory committee, a coherent set of at least three courses, depending on his or her major and other pertinent considerations. At least two of these must be from the primary list. Students must also enroll in Interdisciplinary Studies 197A-B, Global Peace and Security, during the winter and spring quarters. Students in good standing in 197A will receive an IP grade. Students who have completed the essay requirement by May 1 will receive a total of 4 units credit, P/NP only. Students are

also required to participate in a one-year evening colloquium and discussion, meeting three times per quarter, which offers broad perspectives on the entire field (not for unit credit). Each student will prepare an essay which probes issues raised in the colloquium series.

Prospective teachers may, with the aid of the credential adviser of this program, choose a set of courses which will prepare them to deal in the classroom with the issue of global peace and security. These courses can contribute to meeting the secondary or junior college teaching credential requirements in science or social science.

Successful completion of this program is recognized by an appropriate certificate. Further information about the program may be obtained from any member of the advisory committee.

Primary Courses

History

105. The Atomic Age
138. War and Society since 1789

Political Science

121. International Politics
123. Atomic Energy and International Relations
127. American Foreign Policy
129. The United States, Russia, and Europe

Environmental Studies

121. Environmental Effects of Nuclear War
122. World Population and Food Supply or
160. Introduction to Demography

Religious Studies

143. Religion, Revolution, and Peace
155. Religion and The Impact of Vietnam

Physics

102. Physics and Technology of Nuclear Conflict

Secondary Courses

Anthropology

115. Law and Warfare in Nonwestern Societies
122. Anthropology of World Systems
197. Special Courses (consult with advisory committee to determine which courses are appropriate)

Economics

114. Economic Development
180. International Trade
181. International Finance

Geography

220. Seminar in Regional Analysis*

German and Slavic Languages and Literatures (Russian)

33. Russia — from Yesteryear to the Present

History

126. History of Eastern Europe since 1918
135C. History of Russia: 1917 to Present
171B. History of the Foreign Relations of the U.S.
171Q. Readings and Discussions on Cold War History

Military Science

143. World Change and Military Implications

Political Science

120. Mass Media and World Affairs
122. Selected Problems in International Relations: Conflict in the Middle East
124. International Organization
125. International Law
128. Soviet Foreign Policy
130. Comparative Communist Systems
147. The Politics of Developing Areas

Psychology

134. Cooperation, Competition, and Conflict

Religious Studies

105. Human Liberation and Technology

120. Religion, Ideology, and an Emerging World Culture

172. Religion and Science

Sociology

125. Intercultural Studies in Community Milieux Abroad
130. Comparative Social Development and Change
138. Sociology of Conflict: "Receptive Power"

*Please note: Courses numbered 200-299 are graduate courses and are ordinarily open only to graduate students. Exceptionally qualified undergraduates may petition to enroll in graduate courses, but must do so prior to registration.

History

Department of History, Ellison Hall 4834; Telephone (805) 961-2991. Department Chair: W. Elliot Brownlee.

Faculty

Henry M. Adams, Ph.D., Stanford University, Professor Emeritus
Lawrence Badash, Ph.D., Yale University, Professor (*history of science*)
F. A. Bonadio, Ph.D., Yale University, Associate Professor (*Civil War*)
Morton Borden, Ph.D., Columbia University, Professor (*early national U.S.*)
W. Elliot Brownlee, Ph.D., University of Wisconsin, Professor (*American economic history*)
A. Russell Buchanan, Ph.D., Stanford University, Professor Emeritus
Jane Burbank, Ph.D., Harvard University, Associate Professor (*Russia*)
Alexander B. Callow, Ph.D., UC Berkeley, Senior Lecturer with Security of Employment (*American urban history*)
Chi-yun Chen, Ph.D., Harvard University, Professor (*ancient China*)
S. L. Cline, Ph.D., UC Los Angeles, Associate Professor (*Mexico*)
Patricia Cline Cohen, Ph.D., UC Berkeley, Associate Professor (*women, social history*)
Robert O. Collins, Ph.D., Yale University, Professor (*Africa*)
Douglas H. Daniels, Ph.D., UC Berkeley, Associate Professor (*Afro-America*)
Donald C. Davidson, Ph.D., UC Berkeley, Professor Emeritus
Alexander DeConde, Ph.D., Stanford University, Professor (*U.S. diplomatic history*)
Dimitrije Djordjevic, Ph.D., University of Beograd, Professor (*Southeast Europe*)
Harold A. Drake, Ph.D., University of Wisconsin, Professor (*Rome*)
Francis A. Dutra, Ph.D., New York University, Associate Professor (*Brazil and Portugal*)
Sharon Farmer, Ph.D., Rice University, Assistant Professor (*medieval Europe*)
Abraham Friesen, Ph.D., Stanford University, Professor (*Renaissance-Reformation*)
Frank J. Frost, Ph.D., UC Los Angeles, Professor (*ancient Greece*)
Nancy E. Gallagher, Ph.D., UC Los Angeles, Associate Professor (*Middle East*)
Mario T. Garcia, Ph.D., UC San Diego, Professor (*Chicano history*)
Alfred M. Gollin, D. Phil., D. Litt., Oxon., Professor (*modern Britain*)
George M. Haddad, Ph.D., University of Chicago, Professor Emeritus
Carl V. Harris, Ph.D., University of Wisconsin, Associate Professor (*American South*)
Stephen N. Hay, Ph.D., Harvard University, Associate Professor (*India and world history*)

- C. Warren Hollister, Ph.D., UC Los Angeles,
Professor (*medieval Europe*)
- Immanuel C. Y. Hsu, Ph.D., Harvard University,
Professor (*modern China*)
- Robert A. Huttenback, Ph.D., UC Los Angeles,
Professor (*British Empire*)
- Wilbur R. Jacobs, Ph.D., UC Los Angeles,
Professor (*colonial and revolutionary U.S.*)
- Laura Kalman, Ph.D., Yale University, Associate
Professor (*20th-century U.S.*)
- Robert L. Kelley, Ph.D., Stanford University,
Professor (*American intellectual and
political history*)
- Harold C. Kirker, Ph.D., UC Berkeley, Professor
(*American cultural history*)
- Albert S. Lindemann, Ph.D., Harvard University,
Professor (*modern European socialism*)
- Hector Lindo-Fuentes, Ph.D., University of
Chicago, Assistant Professor (*Central
America*)
- Leonard M. Marsak, Ph.D., Cornell University,
Professor Emeritus
- J. Sears McGee, Ph.D., Yale University,
Professor (*Tudor, Stuart*)
- Roderick W. Nash, Ph.D., University of
Wisconsin, Professor (*American
environmental and popular cultural history*)
- Richard E. Oglesby, Ph.D., Northwestern
University, Professor (*the American West*)
- Philip W. Powell, Ph.D., UC Berkeley, Professor
Emeritus
- Carroll W. Pursell, Jr., Ph.D., UC Berkeley,
Professor (*American technology*)
- Joachim Remak, Ph.D., Stanford University,
Professor (*modern Europe*)
- David P. Rock, Ph.D., Cantab, Professor (*Latin
America and Argentina*)
- Jeffrey B. Russell, Ph.D., Emory University,
Professor (*medieval Europe*)
- Henry DeWitt Smith II, Ph.D., Harvard University,
Associate Professor (*Japan*)
- Paul M. Sonnino, Ph.D., UC Los Angeles,
Associate Professor (*early modern Europe*)
- John E. Talbott, Ph.D., Stanford University,
Professor (*France, marine history*)

History is studied to enhance the quality of life for the individual. Without any knowledge of the past, the individual becomes a prisoner of the present — able neither to comprehend the present circumstances and their causes nor to deal intelligently with present problems. As a liberal discipline, history aims to permit students to transcend their own cultural limits and, by the study of other societies in other ages, to open their eyes to the diversity of the human environment. It has often been noted that history is the first truly "interdisciplinary" discipline. This is true because everything, no matter how specialized, has a history, and therefore everything is a proper subject of study for the historian. In this department, for instance, the course offerings range not only from the ancient world to modern times, but also from the history of philosophy and ideas to the history of machines and technology, from governmental elites to popular culture.

The Department of History offers two undergraduate degree programs, the Bachelor of Arts in history, and the Bachelor of Arts in the history of public policy.

The B.A. in the history of public policy, the first to be offered in American higher education, combines comparative studies in history with studies in related academic disciplines. Students are expected to acquire competence in a foreign language, in statistics and computer operations, and in research and writing skills, culminating in the preparation of a senior thesis. An internship in governmental and public affairs is strongly recommended.

The department offers the M.A. and the Ph.D. in history within two parallel curricula. One, traditional in nature, prepares students primarily, though not exclusively, for teaching careers in



Technology, I'm afraid, is one of those subjects about which we know everything and understand little. We pride ourselves on being the most technologically advanced nation in an age of technology. In my teaching, writing, and research I try to help people think about what this means for themselves and future generations.

In my courses on the history of technology in America I use historical monographs, journalists' accounts, novels, plays, movies, and slides to help make the point that we are what we do. The use of tools is one of the signal characteristics of humanity, and the technology we choose to use tells a great deal about what kind of people we want to be.

I strongly believe that every citizen today must be technologically literate, must know not how to build a bridge but what it means to build a bridge. History is a powerful aid to understanding, and the history of technology is a subject as liberating as it is fascinating.

Carroll Pursell

Carroll Pursell
Professor
Department of History

Dr. Pursell has been a visiting research scholar at the Smithsonian Institution and is presently a member of NASA's History Advisory Committee, director of UCSB's Public History Program, and editor of *The Public Historian*. His publications have appeared in specialized journals, the *Encyclopedia Britannica*, and the *New York Times Book Review*, and include such articles as "Women Inventors in America" and "The American Ideal of a Democratic Technology."

higher and secondary education. The second, pioneered at UC Santa Barbara, is a graduate program in public historical studies, which aims at training historians for careers not in teaching, but in the community at large, primarily as researchers and writers.

While personal enrichment is the prime reason that students choose history as a field of study, the nature of the discipline makes it highly desirable as a training ground for many professional fields. The traditional career for the history major has been in teaching, but the breadth of knowledge acquired by studying history is an advantage to those intending a career in business and government service. The stress on the development of research skills, as well as on the ability to think and write clearly, has proven to be excellent preparation for law school and for a wide variety of research and writing jobs.

After completing specific prerequisites, students with a bachelor's degree in history are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

The Department of History designates one of its members each year as principal undergraduate adviser; in addition, certain members of the department are appointed undergraduate advisers, each specializing in one of the two majors. Separate advisers are provided for M.A. and Ph.D. candidates. Publications describing both undergraduate and graduate programs are available from the department.

Education at Home Program (EHP). UCSB students with a special interest in early American history and culture are eligible to apply to the Education at Home Program (EHP). Those selected for the program will spend nine weeks of the winter quarter in Colonial Williamsburg, one week in Philadelphia, and a concluding week in Washington, D.C. With the prior approval of their graduate adviser, graduate students may also apply. Registration is conducted through the Riverside campus with students enrolling in Riverside's Department of History courses 157, 158, and 159. Special arrangements for additional independent study (maximum of 4 units) may be made with the student's major department at UCSB. For further information, brochures, or application forms, call (714) 787-3820 on the Riverside campus.

Prizes and awards. (1) The annual J. Bruce Anderson Fellowship award is endowed by the parents of Dr. Anderson; recipients must be in the Ph.D. program in history. (2) The A. Russell Buchanan Award is presented annually to the graduating senior major deemed most outstanding. (3) The Richard Kent Mayberry Prize is awarded annually to a history graduate student who has completed at least two years in the doctoral program.

Phi Alpha Theta. Membership in the Gamma Iota Chapter of Phi Alpha Theta, the national history honorary society, is open to students who have completed at least five courses in history with a grade-point average of 3.4 or better. Graduate students and faculty also belong to the organization. In addition to regular meetings on campus, the society sponsors student papers at regional and national meetings. Further information about the organization is available at the department office.

UNDERGRADUATE PROGRAM

Bachelor of Arts — History

Preparation for the major. Thirty-two lower-division units, including (1) 12 units of History 4A-B-C; (2) 12 units of History 17A-B-C; (3) 4 lower-

division units in Asian, African, Latin American, or Middle Eastern history; (4) 4 lower-division units in any historical field of the student's choice. Students who have reached upper-division status without completing lower-division requirements for the major should consult an adviser for a list of acceptable upper-division substitutes for lower-division requirements.

Upper-division major. Forty units of upper-division work in history, at least four of which must be in proseminar courses (any course with the letter P after its number). Four units of History 195H may substitute for the proseminar requirement, but additional units earned in 195H may not be applied to the major.

The proseminar. The particular skills of the historian are the ability to define issues, to gather information pertinent to a solution, and to digest and report that information in a clear and well-conceived argument. These skills, which are summed up by the word "research," are especially cultivated in undergraduate proseminars, in which the entire term is devoted to preparing a paper on a specialized topic of research. Majors are required to take at least one such course during their career here, but students serious about developing their research and writing skills are urged to take more than one. Proseminars and their subjects may be readily identified by the letter P after their course number, and by the course title. Since most faculty offer no more than one proseminar a year and enrollment is restricted, advance planning is essential. A list of proseminars to be offered in the current year is available at the Department of History office. Once students have chosen a field for the proseminar, they should approach the faculty to determine when such a proseminar will be offered, so that they may plan their schedules well in advance.

Foreign language. Election to Phi Beta Kappa requires proficiency in one foreign language, normally demonstrated by completion of the fifth quarter or its equivalent. Students contemplating graduate study should consult their prospective graduate schools to determine whether specific languages are required.

Graduation with Distinction in History (The Undergraduate Honors Program)

The Department of History at UCSB traditionally has been committed to excellence in undergraduate education. The lower-division survey courses in American and European history, History 4 and History 17, are regularly offered with an additional 1-unit honors course for students interested in undertaking additional reading and writing assignments. Such honors "trailers" also are available for a number of other courses at the upper- and lower-division levels.

Students who have successfully completed at least two such courses, or who have completed the department's lower-division historiography course, History 6 (Introduction to History), are eligible to enroll in History 100H, Historical Writing. This is an intermediate-level departmental seminar in which major works from a variety of historical periods and regions are studied and criticized. Qualified students who have not been able to satisfy the honors prerequisite (transfer students, for instance) may petition the department's honors committee for admission to History 100H.

In their junior year, students who have successfully completed History 100H and who have maintained a grade-point average in the major of at least 3.6 will be invited to join the department's Senior Honors Seminar, History 195H, in which students pursue research on a topic of particular depth and complexity.

Students admitted into the program will enroll in History 195H for the three quarters of their senior year. History 195H may be used to satisfy the proseminar requirement for majors. However, no more than 4 units earned in this seminar may be applied to the 40 upper-division units required of all majors. In the fall quarter, honors candidates will read, write papers, and build a working bibliography for their thesis. The remaining two terms of the seminar will be devoted to independent research, conducted in consultation with the thesis adviser. At the end of spring term, students will submit three copies of the thesis to the department office. Honors graduates will be eligible for graduation with Distinction in the Major.

Bachelor of Arts — History of Public Policy

Preparation for the major. A total of 32 lower-division units in history, composed of the following: (1) History 7; (2) History 4A-B-C; (3) History 17A-B-C; (4) four additional units in history which must be in the history of countries or cultures outside of Europe and the United States.

Required work in cognate disciplines: 16 units (four courses) chosen from among the following, with at least one course in each of three of the disciplines indicated: Economics 1, 2, or 109; Political Science 3 or 12; Philosophy 3 or 4; Environmental Studies 11, 12, or 13; Sociology 1 or 2. (These may also satisfy the General Education requirements.)

Required work in statistics and computer operations: Computer Science 5 or Interdisciplinary 5.

Required work in foreign language: 0-20 units (i.e. completion of course 5) in a foreign language appropriate to the area of historical emphasis chosen in the major.

Upper-division major. Required work in history: 40 upper-division units including 8 units of History 172A-B; 24 units including 12 units in the history of one nation, continent, or period, and 12 units in the history of a contrasting nation, continent, or period (exclusive of History 172A-B), selected with the approval of the departmental adviser for public policy students; 8 units of History 195I, (senior seminar).

Required work in cognate disciplines: 20 units, taken in one of the following related fields (inclusive of lower- and upper-division courses): economics, political science, environmental studies, philosophy, or sociology. Courses should be selected with the approval of the departmental adviser to public policy students. (Courses taken during the lower-division preparation for the major may be counted in satisfaction of this requirement.)

Please note: Public policy students must secure the departmental adviser's approval for their program each quarter.

Graduation with Distinction in the History of Public Policy (The Undergraduate Honors Program)

History of public policy majors may also enroll in the Honors Program in History, described above. They will do so by fulfilling the listed requirements as to one-unit honors courses or History 6 (Introduction to History); History 100H; and grade-point average. When invited to join the department's Senior Honors Seminar (History 195H), which runs for three quarters in the student's senior year, they will do so with the understanding that History 195H will substitute for History 195I, the required 8-unit senior thesis requirement in the history of public policy major.

GRADUATE PROGRAM

Master of Arts — History

Admission

Students who wish to pursue work toward the M.A. degree in history must meet the general requirements for admission to graduate standing. In addition, they will be expected to have completed an undergraduate major in history or its equivalent. Undergraduate deficiencies as stipulated by the department must be made up in the first year and do not count in satisfaction of graduate degree unit or course requirements. Scores on the Aptitude Test of the Graduate Record Examination are required of all applicants.

The Department of History regards its M.A. degree program as a general, rather than a specialized, program. M.A. candidates should note that the department offers reading courses designed to cover large, general fields (the 200 series), and reading courses designed to cover more specialized fields (the 201 series).

Degree Requirements

The M.A. degree will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements:

Foreign language. Students must pass a reading examination in at least one foreign language approved by the department before taking the comprehensive examination.

Unit requirements. Thirty-six units of upper division and graduate history courses with a minimum 3.0 average are required. At least 20 of these units must be in the graduate courses numbered between 200 and 290, with four units of 202 (which is required of all entering M.A. candidates) and at least eight units in research seminars (numbered between 202 and 290). With permission of the professor who will supervise the work, a candidate may write a thesis in partial fulfillment of the M.A. requirements. A maximum of six units of credit is allowed for the thesis; these units may not substitute for one of the two research seminars required.

Comprehensive examinations. The candidate for the M.A. degree must pass either (1) two three-hour written examinations in any two different fields selected from the list below; or (2) one three-hour written examination in any field listed below in addition to submitting an acceptable thesis on a subject to be determined in consultation with the adviser. The thesis topic must fall within the context of a field other than that of the examination.

The Ancient Mediterranean World

Medieval Europe

Early Modern Europe (1450-1815)

Modern Europe (1789-present)

The United States to 1865*

The United States since 1840*

Latin America, Colonial Period

Latin America, National Period

East Asia before 1800

East Asia since 1800

The Middle East

South Asia

Africa

Science and Technology

**An Afro-American, Chicano, or American Indian emphasis is acceptable in either of these fields.*

Doctor of Philosophy — History

Admission

The M.A. degree in history is normally required for admission into the Ph.D. program. Specialization is available in most areas of history. Students seeking admission to the doctoral program should apply to the department chair. Scores on the Aptitude Test of the Graduate Record Examination are required of all applicants.

Degree Requirements

At least six quarters of full-time study and research in the doctoral program are required. The minimum language requirement is proficiency in one foreign language relevant to the candidate's field of study. The student is urged to complete the foreign language requirement as soon as possible, but in no case later than the end of the second year in the doctoral program. No student will be allowed to take the general examinations for the Ph.D. degree without having completed the language requirement. Except as authorized by the Graduate Council, each student in the doctoral program must satisfy all requirements for the Ph.D. within seven calendar years after admission to the program. The Ph.D. program falls into two parts: (1) preparation for passage of the general doctoral examinations; and (2) preparation of the dissertation.

Preparation for general examinations. During the first quarter, the student, in consultation with the doctoral adviser, will select the three fields of history and one related field of study that will be presented in the qualifying examination. One field of general historical study must be chosen from the following list: United States, Modern Europe, Latin America, Medieval Europe, East Asia, the Middle East, South Asia, Ancient Mediterranean World, Africa, Science and Technology, Public Policy. The second field must consist of a specialized historical area within the general field. A third field of historical specialization outside the general field, and a fourth field outside of the Department of History but comparable in size and scope to the history fields, are also required.

Prior to the general examinations, the student is expected to have taken at least six quarters of history research seminars, four quarters of which must be taken beyond the M.A. degree or its equivalent. The student must take a graduate course in each of the four areas presented for examination. Students are urged to take a course in historiography if they have not done so prior to admission to the doctoral program. It is the responsibility of the student and the doctoral adviser to assure that these requirements are met prior to the examinations.

Qualifying examinations are given annually at the beginning of October, January, and May. Within a period of one month, the student will take written examinations from two of the chosen history fields; each examination will be of three hours' duration. Within one week of passing these written examinations, the student will take a two-hour oral examination in all four fields. Written examinations must be passed before the orals are taken. The selection of fields to be taken in the written examinations must be approved by the doctoral adviser.

Dissertation. The doctoral dissertation must be an original work of historical research in the field of the candidate's specialization. It must be written in clear prose, must have intellectual depth, and must demonstrate a mastery of historical methodology. The examination committee will serve as the dissertation committee. When the dissertation is approved, the candidate may be

asked to appear for an oral examination in the field of the dissertation.

Teaching assistantship. A candidate will be required to qualify for and hold a teaching assistantship or a research assistantship (subject to the availability of funds) as part of the preparation for the Ph.D. degree.

Graduate Program in Public Historical Studies

The Department of History has established within its graduate program a public history option at the master's and doctoral levels. This unique offering trains professional historians to serve as research historians working within the community at large, rather than in academic institutions. Either as persons in various types of private practice, or on the staffs of public agencies — as in city, county, state, and federal governments — they will research and write historical studies of problems of concern to particular communities or political jurisdictions; aid them in recapturing and in recording and understanding their histories as communities and as organizations; and serve in a variety of other professional employments, as in giving testimony in court proceedings, preparing family histories, preparing environmental impact statements, conducting surveys of historic properties and other cultural resources, and working in historical agencies.

Students will specialize in: 1) the history of policy, 2) community history, or 3) cultural resource management. Courses are also available in such fields as medical history, legal history, the history of architecture, and others. An internship is required.

For further information, request a copy of the public historical studies brochure from the Department of History, which describes curriculum and other aspects of the program in detail.

HISTORY COURSES

LOWER DIVISION

4A-B-C. Western Civilization

(4-4-4) Staff

A: Prehistory to A.D. 1050

B: 1050 to 1715.

C: 1715 to present.

History 4A-B-C is a general survey course, designed to acquaint the student with major developments that have influenced the course of western civilization since the earliest times. These developments are as likely to be in religion, the arts, and sciences as in the more traditional political field. Weekly discussion sections are an important feature of this course, enabling the student to develop and expand upon material presented during the lecture hour. (Offered annually in fall-winter-spring sequence.)

4AH-4BH-4CH. Western Civilization

(1-1-1) Staff

Prerequisites: concurrent registration in History 4A, B, or C, and consent of instructor.

After History 4A-B-C begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminars (4H) or a total of five units for History 4 per quarter.

6. Introduction to History

(4) Staff

Strongly recommended for new majors or students interested in history as a discipline.

Study of the development, goals, and methods of the history profession. Extensive reading in the

theory and practice of history, and comparison of history with other disciplines in a seminar setting featuring visits by history faculty to discuss their specialized work.

7. Great Issues in the History of Public Policy

(4) Kelley

Broad exploration of great issues in the history of public policy from ancient times to the present, to understand basic ways in which societies make their major decisions, the shared dynamics in the process, and how varied settings affect it.

8. Introduction to History of Latin America

(4) Rock

The course will deal with major issues in Latin America's historical formation: pre-Hispanic cultures, the Spanish conquest, the role of colonial institutions, the development of trade, eighteenth-century reform, independence, the formation of nations; and identify major issues in current Latin American affairs.

9A-B. Comparative History of the Americas

(4-4) Staff

A: A comparative study of expansion, race relations, society, culture, economy, religion, and government in the western hemisphere, 1492 to 1808.

B: A comparative study of revolutions, reform, reaction, minorities, economic growth, imperialism, government, and intellectual developments in the western hemisphere, nineteenth and twentieth centuries.

10. Introduction to Chicano History

(4) Garcia

Prerequisite: lower-division standing.

The historical heritage of the Chicano from Indian and Spanish origins to the contemporary period. Particular stress will be placed on the interpretation and analysis between key periods in world and U. S. history to the experience of Chicanos.

12. Greeks and Barbarians

(4) Frost

Prerequisite: lower-division standing.

The story of the first great conflict between East and West, as told by the father of history, Herodotus. (Offered irregularly.)

13. The Ides of March

(4) Drake

Causes and consequences of the most famous date in Roman history, explored through literature, film, and ancient sources. (Offered periodically.)

17A-B-C. The American People

(4-4-4) Staff

A: Colonial through Jacksonian era.

B: Sectional crisis through progressivism.

C: World War I to the present.

A survey of the leading issues in American life from colonial times to the present. The course focuses on politics, cultural development, social conflict, economic life, foreign policy, and influential ideas. Features discussion sections. (Offered annually in fall-winter-spring sequence.)

17AH-17BH-17CH. The American People

(1-1-1) Staff

Prerequisite: concurrent enrollment in History 17A, B, or C.

After History 17 begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar (17H) or a total of five units for History 17 per quarter.

19. The Rise of the People's Republic of China

(4) Hsu

Examination of domestic and foreign factors leading to the rise of the People's Republic of China. The role of the United States will be stressed. (Offered periodically.)

35. The Russian Revolution

(4) Burbank

An introductory course in Russian history, from 1905 through 1921. Lectures, readings, and discussions will focus on the dissolution of the old regime, the crisis of war and revolution, and the beginnings of a new state system.

35H. The Russian Revolution

(1) Burbank

Prerequisites: concurrent enrollment in History 35 and consent of instructor.

After History 35 begins, selected students will be invited to enroll in the honors seminar, which supplements the lecture course with additional readings and discussion.

46. Survey of Middle Eastern History

(4) Gallagher

Course themes include rise of Islam, development of Islamic civilization, the western impact, and current struggles and conflicts.

49. Survey of African History

(4) Staff

A comprehensive survey of the history of Africa below the Sahara, from pre-colonial times to the present. Basic concepts necessary for the study of African history on the advanced level will be introduced and explained.

72. The Modern American Mind

(4) Kelley

An exploration of leading currents in modern thought. Particular attention to William James, Sigmund Freud, Erik Erikson, and to such broad social movements as the youth culture, social prejudice, and the impact of science. (Usually offered annually in fall.)

74. Science, Technology, and American Society

(4) Pursell

A reading and discussion course of limited enrollment, aimed at exploring selected topics in the history of science, technology, and their relations with American society in general. (Offered irregularly.)

78. The City in American History

(4) Callow

A chronological and topical survey of the American city from the colonial period to the present.

80. East Asian Civilization

(4) Staff

A basic introduction to the history of East Asia, focusing on the emergence and evolution of Chinese civilization and its impact upon the distinctive indigenous cultures of Japan, Korea, and Vietnam.

86. China's Cultural Tradition

(4) Chen

A brief survey of China's magnificent cultural achievements in the past, and a study of how the great tradition became an impediment to revolutionary changes and in what way it still shapes the course of the present revolution

90. Japanese History through Art and Literature

(4) Smith

A basic introduction to the history of Japanese culture from its origins to the present day, with

particular emphasis on the evidence of architecture and painting (presented through audiovisual modules). Selected examples of fiction and poetry will also be used. (Normally offered every year.)

UPPER DIVISION**100H. Historical Writing**

(4) Staff

Prerequisite: at least two units of "H" credit, or History 6, or consent of department honors committee.

An intermediate-level honors seminar in which students read and critique major primary and secondary works from a variety of periods and regions.

101A. The Growth of Science and the Modern State: 1614-1815

(4) Marsak

Prerequisite: any lower-division history course or upper-division standing.

A study of the growth of human power through the scientific revolution and the formation of the sovereign state; and the transformation of the state through political revolution into the nation state.

101B. State and Revolution in the Modern World: 1815-Present

(4) Marsak

Prerequisite: any lower-division history course or upper-division standing.

A continuing study of revolution and of the emerging tyrannies of the twentieth century through the growth of democracy and technicism.

102. Main Themes in American History

(4) Staff

Prerequisite: upper-division standing.

Not a survey course, the lectures are selective and will emphasize various themes that Americans have been concerned with historically.

103. European Historiography

(4) Friesen

Prerequisites: History 4A-B-C.

The study of the development of history as an independent discipline and the influence of intellectual and other trends or events upon the interpretation of history from the Greeks to the moderns.

104. Great Minds in World History

(4) Hay

Prerequisite: History 4A or 4C.

Basic ideas about human nature and human potentialities are studied through the sayings attributed to Confucius, the Buddha, Jesus, and Muhammad, and the writings of Lincoln, Marx, Gandhi, and Einstein. The historical influences and future value of these ideas will also be considered.

104P. Special Studies of Great Minds

(4) Hay

Prerequisite: History 104. May be repeated for credit to a maximum of eight units.

A proseminar in which students will do research in selected ideas of great minds in world history.

105. The Atomic Age

(4) Badash

Prerequisite: any lower-division history course or upper-division standing.

The history of military uses of nuclear energy and the attendant problems. Topics included: Manhattan Project, decision to use the bomb, legislation, AEC, arms race, testing, fallout, civil defense, disarmament efforts, foreign programs, espionage.

105P. Proseminar in Atomic Age Problems

(4) Badash

Prerequisite: upper-division standing or consent of instructor. History 105 or 106C recommended. Not restricted to history majors. May be repeated for credit to a maximum of eight units.

Seminar, with research paper, on relationship between science and technology and society. Topics, one each course, will include Hiroshima and Nagasaki, Arms Race, arms control, science and social responsibility, politics of science, scientific advice to government, civilian uses of nuclear energy.

106A. The Origins of Western Physical Science, Antiquity to 1600

(4) Badash

Prerequisite: History 4A or 4B, or any lower-division science course, or upper-division standing.

The development of astronomy, physics, chemistry, and the organization of science, traced from Babylonian times through the Greek, Roman, Islamic periods, and the Middle Ages in the West, to the scientific renaissance. Emphasis on the growth of scientific ideas.

106B. The Scientific Revolution, 1600 to 1875

(4) Badash

Prerequisite: History 4B or 4C, or any lower-division science course, or upper-division standing.

The establishment of heliocentric astronomy and mechanical philosophy by Galileo, Newton, and others, the creation of scientific societies and periodicals, the rise of chemical and electrical sciences, the influence of science upon the Enlightenment, physical science survey in eighteenth and nineteenth centuries.

106C. Modern Physical Science 1875 to Present

(4) Badash

Prerequisite: History 4C, or any lower-division science course, or upper-division standing.

The second Scientific Revolution, including the discoveries of x-rays, radioactivity, the electron, relativity, and quantum theory; the growth of atomic and nuclear physics and of quantum mechanics; aspects of astronomy, chemistry, Nazi science, scholars' migration, and discovery of nuclear fission.

107S. History of Seafaring

(4) Frost

Prerequisite: any quarter of History 4A-B-C or upper-division standing.

A history of man and the sea from earliest times to the era of the clipper ships. Emphasis on exploration, discovery, and the subsequent effects of overseas trade, colonization, and conquest on human history.

108P. Special Studies in the Comparative History of the Americas

(4) Dutra

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

A weekly seminar on the comparative history of the Americas. A research paper will be required.

110. Social History of Medicine

(4) Gallagher

Prerequisite: upper-division standing.

Course themes include the development of medicine and health care in the United States, women and the medical profession, alternate medical systems, and current crises in medical policy.

110Q. Seminar in Medical History

(4) Gallagher

Prerequisite: History 110 (may be taken concurrently).

Topics in Asian, African, European, and American medical systems focusing on their historical evolution in the nineteenth and twentieth centuries.

111A-B. History of Greece

(4-4) Frost

Prerequisite: History 4A or upper-division standing.

A: From Neolithic times to Alexander the Great. (Usually offered annually in the winter.)

B: From the death of Alexander to the reign of Justinian. (Usually offered annually in spring.)

111P. Special Studies in Ancient History

(4) Frost

Prerequisite: one quarter of either History 111A-B or 113A-B. May be repeated for credit to a maximum of eight units.

Research seminar in ancient history.

112A. The Ancient Aegean

(4) Frost

Prerequisite: History 4A, or Anthropology 3, or upper-division standing.

Prehistory and archaeology of the early Aegean littoral, from Mycenae to the Lyric Age.

112F. Women in the Ancient Greek World

(4) Frost

Prerequisite: History 4A or upper-division standing.

A history of the evolving roles of women in Greek society, from the Bronze Age to Hellenistic and Roman times, as portrayed by literature, archaeology, and the fine arts.

113A-B. Roman History

(4-4) Drake

Prerequisite: History 4A or upper-division standing.

A: From Neolithic times to the fall of the Republic.
B: The Roman Empire.

113P. Proseminar in Roman History

(4) Drake

Prerequisite: one quarter of History 113A-B or consent of instructor. May be repeated for credit to a maximum of eight units.

Students produce a research paper on a topic of their choice in the history of either the Republic or Empire. From time to time, a seminar might be devoted to aspects of a particular topic.

114A-B-C-D. History of Christianity

(4-4-4-4) Russell, Friesen

Prerequisites: any two quarters of History 4A-B-C.

A: Beginning to 800.

B: 800 to 1300.

C: 1300 to 1648.

D: 1648 to present.

114AS-BS-CS-DS. The History of Christianity

(1-1-1-1) Russell, Friesen

A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion. Such students will receive one unit for the discussion section (114S) or a total of five units for History 114 per quarter.

114P. Proseminar in the History of Christianity

(4) Russell

Prerequisites: History 4A and 114A.

Reading, evaluation, and analysis of the sources of the history of Christianity in the first five centuries.

115. The Fall of Rome and the Birth of Europe: 300 to 1050

(4) Hollister

Prerequisite: History 4A.

The political, economic, and cultural evolution of Europe from the time of Constantine to the mid-eleventh century.

115P. Proseminar in Medieval History

(4) Hollister

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

Seminar which trains students in the methods of historical research. A research paper will be written on a topic within the general area of medieval European history.

115Q. Special Studies in Medieval European History

(1-4) Hollister

Prerequisite: History 115 or 116 or consent of instructor. May be taken more than once.

Study of specified topics in medieval European history. A research paper will be required.

116. The Civilization of the High Middle Ages: 1050 to 1350

(4) Hollister

Prerequisite: History 4B.

European civilization during the high Middle Ages. The struggle between church and state, the rise of feudal monarchies, the revival of commerce, and the flowering of medieval culture.

117A. Social History of the Early Middle Ages: 400-1000

(4) Farmer

Prerequisite: History 4A or History 4B.

Chronological and topical survey of early medieval social history: demographic decline, decline of commerce and cities, formation of peasant and noble classes, agrarian regime.

117B. Social History of the High Middle Ages: 1000-1400

(4) Farmer

Prerequisite: History 4A or History 4B.

Chronological and topical survey of high medieval social history: rise of population, growth of cities and long distance trade, civic life and rituals, demographic and social crises of the fourteenth century.

117C. Women, the Family, and Sexuality in the Middle Ages

(4) Farmer

Prerequisite: History 4A or History 4B. Students who have received credit for History 117 may not take this course for credit.

Course focuses on family structure; perceptions and ideals of intimate and familial relations; status, perceptions, and experiences of women in western Europe c. 400-1400 A.D. Special attention will be given to social, political, and religious contexts.

118. Varieties of Utopianism and Social Reform from Joachim of Fiore to Karl Marx

(4) Friesen

Prerequisite: History 4B.

A study of the varieties of utopian thought from Joachim of Fiore (1200) to Karl Marx (1848) and the relevance of this thought to social reform.

120A-B. Renaissance-Reformation

(4-4) Friesen

Prerequisite: History 4B.

The political, economic, and cultural evolution of Europe, 1300 to 1648.

120AH-BH. Renaissance-Reformation

(1-1) Friesen

Prerequisites: concurrent enrollment in History 120A-B.

A weekly one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion.

121A-B-C. History of Europe in Seventeenth and Eighteenth Centuries

(4-4-4) Sonnino

Prerequisites: History 4B and 4C, or upper-division standing.

A: 1600 to 1715, political, social, economic, diplomatic, and intellectual history in comparative and national contexts.

B: 1715 to 1789, the crisis of the old regimes, the Enlightenment.

C: 1789 to 1815, French Revolution and Napoleon.

123A-B. History of Europe in the Nineteenth and Twentieth Centuries

(4-4) Staff

Prerequisites: History 4A-B-C, or equivalent.

History 123A is prerequisite to History 123B.

European civilization in the nineteenth and twentieth centuries; interrelationships of the centuries and of Europe to the world.

123Q. George Orwell's Europe, 1920 to 1950

(4) Talbott

Prerequisite: History 4C.

A study of the author of 1984 and his writings on urban poverty, popular culture, the Great Depression, imperialism, the Spanish civil war, totalitarianism.

124B. Intensive Course in Serbo-Croatian Language

(4) Staff

Prerequisite: History 4C.

Intensive course in Serbo-Croatian language for beginners.

124C. The Serbo-Croatian Language

(4) Staff

Prerequisite: History 124B.

Intensive second-year language course of the Serbo-Croatian language.

124E. The Balkans and the Eastern Question

(4) Djordjevic

Prerequisite: History 4C or upper-division standing.

European powers and the Balkans from the Napoleonic wars until the invasion in World War II. The part which the Balkans played in European diplomacy from the Vienna Congress (1814) until the Yalta and Potsdam agreements (1945).

124F. European Peace Settlements in the Nineteenth and Twentieth Centuries

(4) Staff

Prerequisite: History 4C or consent of instructor.

An investigation into how far settlements of 1815 (Vienna), 1856 (Paris), 1878 (Berlin), 1913 (Bucharest), 1919-20 (Paris), and 1947 (Paris) solved tensions and established peace and security.

124G. The Modern History of Poland and Hungary

(4) Staff

Prerequisite: History 4C or consent of instructor.

The story of a Slav and a non-Slav nation in present-day Eastern Europe, that shows much similarity and affinity, based on their common Western heritage. Emphasis on the last 150 years.

124M. Beyond Marx and Lenin: The Yugoslav Experiment

(4) Djordjevic

Prerequisite: History 4C.

Self-management and nonalignment. Nationalism and communism in Yugoslavia. Dissidents and internal controversies. Recent social, political, and cultural developments. What after Tito?

124N. Peasant, National, and Communist Revolutions in the Balkans

(4) Djordjevic

Prerequisite: History 4C.

Revolutionary origins of the Balkan states in the nineteenth century. The Balkans in two world wars. Origins and consequences of communist revolutions. The Balkan microcosmos nowadays: nonaligned Yugoslavia, Soviet Bulgaria, pro-Chinese Albania, emancipated Rumania, pro-Western Greece.

124PP. Special Studies in East European History

(4) Staff

Prerequisites: History 4C or 124E or 124N; and History 126. May be repeated once for credit.

Research seminar in Balkan and East European history in the nineteenth and twentieth centuries.

124PS. Proseminar in Eastern Europe

(4) Staff

Prerequisite: History 4C.

Research seminar in eastern Europe from 1918.

124R. History of Eastern Europe Before 1918

(4) Staff

Prerequisite: History 4B or 4C.

The rise of nationalism in Danubian Europe 1790-1918; nationalities and national minorities, nationalism and liberalism, Danubian Europe from the enlightenment to World War I.

125A-B. Intellectual History of Modern Europe

(4-4) Marsak

Prerequisites: History 4C or 101A-B.

Scientific ideas and ethical systems of thought in France, Britain, and Germany. Topics include the metaphysics and ethical values of modern science, sovereignty, the idea of progress, bourgeois liberalism, socialism, and secular humanism.

126. History of Eastern Europe Since 1918

(4) Djordjevic

Prerequisite: History 4C.

A political, social, and economic history of south-eastern Europe — especially of the successor states to the Hapsburg monarchy of Czechoslovakia, Hungary, Poland, Rumania, and Yugoslavia — from 1918 to the present.

127. History of Modern European Socialism

(4) Lindemann

Prerequisite: History 4C or consent of instructor.

A survey of the history of European socialism: from the Utopian socialists to the present day; special emphasis on Marxism, Leninism, Stalinism, but also on the evolution of democratic socialism.

128A-B. Twentieth-Century Europe

(4-4) Remak

Prerequisite: History 4C.

A political, economic, cultural, and diplomatic history of Europe from the First World War to the present.

128P. Proseminar in Twentieth-Century Europe

(4) Remak

Prerequisite: History 128A or 128B. May be repeated for credit to a maximum of eight units. Special topics in European history from World War I to present.

129A-B-C. Europe in the Seventeenth Century

(4-4-4) Sonnino

Prerequisite: History 4B or upper-division standing.

Economic, social, political, and intellectual history of the seventeenth century.

131F. Anti-Semite and Jew in Modern Europe and America, 1870 to Present

(4) Lindemann

Prerequisite: History 4C.

A study of modern anti-Semitism, beginning with the appearance of political anti-Semitism in Germany and Austria-Hungary; the Dreyfus Affair; Jewish patriots and revolutionaries; Nazism and the Jews; Zionism; anti-Semitism since WW II.

131P. Proseminar in the History of Anti-Semitism in Modern Europe and America

(4) Lindemann

Prerequisite: History 131F. May be repeated for credit to a maximum of eight units.

Research seminar in the history of anti-semitism in Europe and America.

134. Russian Intellectual History

(4) Burbank

Prerequisite: History 135B, or 135C, or consent of instructor.

A survey of the intellectual history of modern Russia, with attention to the formation of the intelligentsia and to the relations between ideas and politics.

135A. History of Russia: Origins to 1800

(4) Burbank

Prerequisite: any lower-division course in history or upper-division standing.

A survey of Kievan Rus', Muscovite state and society, and early imperial Russia.

135B. History of Russia: 1800 to 1917

(4) Burbank

Prerequisite: any lower-division course in history or upper-division standing.

A survey of Russian history from the reign of Alexander I until the collapse of the imperial regime in 1917.

135C. History of Russia: 1917 to Present

(4) Burbank

Prerequisite: any lower-division course in history or upper-division standing.

A history of the Soviet Union, focusing on social and economic changes since 1917.

135P. Problems in Modern Russian History

(4) Burbank

Prerequisites History 135B or 135C, and consent of instructor.

A weekly seminar on a topic in modern Russian and/or Soviet history.

137. The Origins of Contemporary France

(4) Talbott

Prerequisite: History 4C or upper-division standing.

Transformation of a tradition-bound rural society into a leading industrial power, 1815 to the present.

138. War and Society Since 1789

(4) Talbott

Prerequisite: History 4.

Topics in war, the state and society since 1789. Origins and consequences of wars, and the political, social, and economic aspects of both land and sea warfare. A seminar, with limited enrollment.

139A. Seminar on the History of the British Empire and Commonwealth

(4) Huttenback

Prerequisite: History 4A-B-C.

A seminar on the British imperial experience from its origins to the present: imperial history, the motivations for imperial expansion, and racial factors will be emphasized.

139B. Seminar on the History of Canada

(4) Huttenback

Prerequisites: History 4A-B-C.

A seminar on the history of Canada from the first French settlements until the present day. Political, social, and economic factors leading to Canadian uniqueness will be emphasized.

139C. Seminar on the History of India and Pakistan

(4) Huttenback

Prerequisites: History 4A-B-C.

Introduction to the history of India and Pakistan from the seventeenth century to the present with special emphasis on the cultural clash between Indian and western views of the world.

140A-B. Early Modern Britain

(4-4) McGee

Prerequisite: History 4B.

A history of England from the late Middle Ages to the eighteenth century.

140AH-BH. Early Modern Britain

(1-1) McGee

Prerequisites: concurrent enrollment in History 140A-B and consent of instructor.

A weekly, one-hour section, open to any students who would like to supplement the material of the lecture course with additional readings and discussion.

140P. Proseminar in Early Modern British History

(4) McGee

Prerequisites: History 140A and 140B and consent of instructor. May be repeated for credit to a maximum of eight units.

A writing seminar in which emphasis is placed upon the use of primary sources.

141A. England in the Age of Queen Victoria — the Nineteenth Century

(4) Gollin

Prerequisite: any lower-division history course.

England in the age of Queen Victoria — the nineteenth century.

141B. From the Death of Queen Victoria to the Battle of Britain — the Twentieth Century

(4) Gollin

Prerequisite: any lower-division history course.

From the death of Queen Victoria to the Battle of Britain — the twentieth century.

141P. Proseminar in Recent English History

(4) Gollin

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit up to a maximum of eight units.

Research in recent British history including topics in social, political, cultural, intellectual, military, naval, and aeronautical subjects.

142. History of North Africa

(4) Gallagher

Prerequisite: History 46 or upper-division standing.

Survey of the history of Morocco, Algeria, Tunisia, and Libya in the nineteenth and twentieth centuries. Themes include the imposition of colonial rule, revolutionary struggles, and post-independence development.

143. The Nile Quest

(4) Collins

Prerequisite: upper-division standing.

An examination of African and Victorian societies during the half century in which English explorers sought the source of the Nile. The greatest geographical puzzle of the nineteenth century, the search for the source of the Nile, opened Africa to European partition, imperialism, and modernization.

143P. Proseminar in the Nile Quest

(4) Collins

Prerequisite: History 143. May be repeated for credit to a maximum of eight units.

An undergraduate research seminar for students who have taken History 143 and wish to conduct more intensive studies of the Nile Valley.

144. Imperialism and Resistance in Africa

(4) Collins

Prerequisite: upper-division standing.

An examination of African resistance to European encroachment and colonialism in tropical Africa.

144I. Imperialism and the British Empire

(4) Collins

Prerequisite: History 4C.

An investigation of imperialism with examples from the modern British Empire.

144P. Proseminar in Imperialism and Resistance in Africa

(4) Collins

Prerequisite: History 144. May be repeated for credit to a maximum of eight units.

An undergraduate research seminar for students who have taken History 144 and wish to conduct more intensive studies of African resistance and European imperialism.

145A-B. History of the Medieval Middle East

(4-4) Gallagher

Prerequisite: History 46 or upper-division standing.

Course themes include the Byzantine and Sassanid empire, the rise of Islam, the development of Islamic science and society, the formation of the "gun powder" (Mamluk, Mongol, and Ottoman) emperors.

A: The seventh to twelfth centuries.

B: The twelfth through eighteenth centuries.

146A-B. History of the Modern Middle East

(4-4) Gallagher

Prerequisite: History 46 or upper-division standing.

Course themes include the western impact, forms of resistance, and political, social, economic, and religious dimensions of current crises in Turkey, Iran, and the Arab world.

A: The nineteenth century.

B: The twentieth century.

146P. Proseminar in the History of the Modern Middle East

(4) Gallagher

Prerequisite: History 146A or 146B or consent of instructor. May be repeated for credit up to a maximum of eight units.

A weekly seminar on a topic in modern Middle East history. A research paper will be required

146T. History of the Arab-Israeli Conflict

(4) Gallagher

Prerequisite: History 46 or upper-division standing.

History of the Arab-Israeli conflict from the mid-nineteenth century to the present. Course themes include evolution of Zionism, Palestine before World War I, the British Mandate, World War II, the Arab-Israeli Wars, rise of Palestinian nationalism, and Israeli and Palestinian societies today.

147. Modern African History

(4) Staff

Prerequisite: upper-division standing.

This is a basic survey course on modern African history in the nineteenth and twentieth centuries, in which the era of colonial rule will be stressed. The emphasis will be on Africa south of the Sahara.

147P. Special Studies in Modern African Intellectual History

(4) Staff

Prerequisites: upper-division standing and consent of instructor. May be repeated for credit to a maximum of eight units.

Research seminar in modern African intellectual and cultural history.

148P. Proseminar in Personal and Family History

(4) Staff

Prerequisites: upper-division standing and consent of instructor. May be repeated for credit to a maximum of eight units.

How to collect, analyze, and write personal history within the student's own family or community. Methods of collecting information from written, oral, and visual materials will be studied, and students will write a biography (term paper) on some member of their family or a surrogate family.

149A. West African History

(4) Staff

Prerequisite: History 147.

Interpretive studies of modern West African political and intellectual leaders with emphasis on resistance to colonial rule, drive for self-government, renaissance of neo-African culture, neocolonialism, and continuing revolution.

149B. History of South Africa

(4) Staff

Prerequisite: upper-division standing.

Economic, social, and political history of South Africa.

149C. History of East Africa

(4) Collins

Prerequisite: upper-division standing.

Economic, social, and political history of East Africa.

149D. History of Contemporary South Africa

(4) Shell

Prerequisite: History 49 or History 149B.

A history of South Africa from the Boer War to the present including such topics as the unification of South Africa, South Africa between the wars, the rise and implementation of apartheid, and the reactions of the peoples of South Africa.

149P. Proseminar in African History

(4) Collins

Prerequisites: at least two courses dealing with the African past. May be repeated for credit to a maximum of eight units.

Undergraduate research in African history.

150A-B. Spain and Spanish Empire

(4-4) Staff

Prerequisite: upper-division standing or consent of instructor.

A: Medieval Spain, to 1516. (Usually offered annually in fall.)

B: From 1516 to the present. (Usually offered annually in winter.)

150Q. Special Studies in Spanish History

(1-4) Staff

Prerequisite: History 150A or 150B or consent of instructor. May be repeated once for credit.

Enrollment limited.

Reading and discussion on specified topics. (Usually offered annually in spring.)

151A-B-C. Hispanic American History

(4-4-4) Cline, Lindo-Fuentes, Rock

Prerequisite: History 8 or upper-division standing.

A: A general survey of the social, economic, institutional, and intellectual history of colonial Spanish America (1492-1800), with comparisons to colonial Brazil.

B: Nineteenth-century Latin America. Topics include: the independence movements, the consolidation of the new states, and the rise of export-oriented economies.

C: Twentieth-century Latin America: the export economies, industrialization, the rise of U. S. hegemony; populism and military dictatorship in the postwar period; the Mexican and Cuban revolutions; Vargas, Peron, Cardenas, Castro, and Allende.

152A-B. History of Central America

(4-4) Staff

Prerequisite: History 8.

A survey of the history of Central America from colonial times to the present. The course emphasizes the historical trends that help to explain the generalized crisis of the 1980s.

A: From the colonial period to 1900.

B: 1900 to the present.

152C. Latin American Economic History

(4) Staff

Prerequisite: History 8.

A survey of the main problems of the economic history of Latin America during the colonial and national periods. The course will discuss dependency and neoclassical interpretations.

152P. Proseminar in Central American History

(4) Lindo-Fuentes

Prerequisite: History 152A or 152B.

A weekly seminar on a topic in modern Central American history. A research paper will be required.

153. Comparative Seaborne Empires: 1415 to 1825

(4) Dutra

Prerequisite: any lower-division course in history or upper-division standing.

Analysis of the similarities and differences between the overseas activities of Portugal, Spain, France, England, and the United Provinces of the Netherlands.

153L. History of Argentina from Spanish Settlement to the Present Day

(4) Rock

Prerequisite: History 8 or upper-division standing.

A case study in economic underdevelopment and political instability.

153P. Special Studies in the History of Overseas Expansion: 1415-1825

(4) Dutra

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

A weekly seminar on overseas expansion (Portugal, Spain, England, France, and the Netherlands), 1415-1825. A research paper will be required.

154A-B. Portugal Overseas

(4-4) Dutra

Prerequisite: any lower-division course in history or upper-division standing.

A: A comparative analysis of Portuguese activity in Africa, Asia, and America, 1415 to 1825.

B: The Portuguese in Africa and Asia, 1826 to the present.

154P. Special Studies in the History of Portuguese Expansion

(4) Dutra

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

A weekly seminar on Portuguese expansion in Africa, Asia, and America. A research paper will be required.

155A-B. History of Portugal

(4-4) Dutra

Prerequisite: any lower-division course in history or upper-division standing.

A: A general survey of Portugal from its origins to 1580 with an emphasis on social, economic, and cultural history.

B: Modern Portugal, 1580 to the present.

155P. Special Studies in the History of Portugal

(4) Dutra

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

A weekly seminar on the history of Portugal from its origins to the present. A research paper will be required.

156A-B. History of Mexico

(4-4) Cline

Prerequisite: History 8 or upper-division standing.

A: Socioeconomic history of colonial Mexico with special attention on the indigenous peoples.

B: The nineteenth and twentieth centuries. Independence, the age of Santa Anna, the Reform, Porfiriato, the Mexican Revolution, modern politics, and the economy of the 1970s.

156P. Special Studies in Mexican History

(4) Cline

Prerequisite: History 156A or 156B or consent of instructor. May be repeated for credit to a maximum of eight units.

Reading and discussion on topics in Mexican social and economic history.

157A-B. History of Brazil

(4-4) Dutra

Prerequisite: any lower-division course in history or upper-division standing.

A general survey of the history of Brazil in two quarters:

A: From the discovery of the New World to the formation of the empire. (Offered every other year; alternates with History 155A).

B: Modern Brazil. (Offered every other year; alternates with History 155B).

157C. Intellectual History of Brazil: Modern Period

(4) Dutra

Prerequisite: any lower-division course in history or upper-division standing.

Focuses on the impact of intellectuals and ideas on Brazilian society in the nineteenth and twentieth centuries.

157P. Special Studies in the History of Brazil

(4) Dutra

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

A weekly seminar on the history of Brazil in the colonial and modern periods. A research paper will be required.

158. The Great Revolutions of Latin America

(4) Rock

Prerequisite: upper-division standing.

A survey of great revolutionary movements in Latin America: the Spanish Conquest, the struggle for independence in the early nineteenth century, the Mexican and Cuban revolutions of the twentieth century, with commentaries on contemporary counter-revolutionary movements in Brazil, Chile, and Argentina.

159A-B. Women in American History

(4-4) Cohen

Prerequisites: any two quarters of History 17A-B-C or upper-division standing.

A social history of women in America, investigating changing patterns of marriage, reproduction, and work, as well as cultural values about the female role, with attention to differences of race, class, and ethnic background; and analysis of feminist thought and the several women's movements.

159E. American Social History, Seventeenth to Nineteenth Centuries

(4) Cohen

Prerequisite: History 17A or 17B.

The evolution of American society from colonial settlement to early industrialization, with analysis of social institutions (family, church, polity), relationships (sex, class, race, ethnicity), and processes (community integration and stability, disorder and control, and social mobility).

159P. Proseminar in Women's History

(4) Cohen

Prerequisite: History 159A or 159B. May be repeated for credit up to a maximum of eight units.

Research seminar on the history of women in America.

159Q. Special Studies in Women's History

(4) Cohen

Prerequisite: History 159A or 159B.

The study of special topics in the history of women in the United States.

160A. The American South to 1865

(4) Harris

Prerequisite: History 17A or upper-division standing.

The origins and development of distinctive economic, social, political, and cultural patterns in the ante-bellum South.

160B. The American South, 1865 to the Present

(4) Harris

Prerequisite: History 17B or 17C or upper-division standing.

Change and resistance to change in Southern economic, social, political, and cultural life since the Civil War.

160P. Proseminar in the History of the American South

(4) Harris

Prerequisite: History 160A or 160B. May be repeated for credit to a maximum of eight units. Research in selected problems in the history of the American South.

161. Colonial and Revolutionary America

(4) Jacobs, Cohen

Prerequisite: History 17A or upper-division standing.

America from early settlement to the American Revolution, with emphasis on the political, cultural, and socioeconomic history of the peoples of early America.

161P. Special Studies in Early American History

(4) Cohen

Prerequisite: History 17A or History 161. May be repeated for credit to a maximum of eight units.

Research seminar on seventeenth- and eighteenth-century America.

162A. The Age of Jefferson

(4) Borden

Prerequisite: History 17A or upper-division standing.

History of the United States from the American Revolution to the War of 1812, emphasizing the creation of the federal government, the rise of political parties, and the emergence of national character.

162B. The Age of Jackson

(4) Borden

Prerequisite: History 17A or upper-division standing.

History of the United States from 1815 to 1840, emphasizing the political, economic, and social transitions of that period, and the changes in popular attitudes and expectations which culminated in Jacksonian Democracy.

164C. Civil War and Reconstruction

(4) Bonadio

Prerequisite: History 17B or upper-division standing.

A history of the United States during the second half of the nineteenth century. Emphasis is placed on the causes of the Civil War, the outstanding developments of the war itself, and the major consequences of the Reconstruction period.

164CP. Proseminar in Civil War and Reconstruction

(4) Bonadio

Prerequisite: History 164C or History 17B. May be repeated for credit to a maximum of eight units.

Research seminar on events leading up to the outbreak of the Civil War.

164I. American Immigration

(4) Bonadio

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

A survey of American immigration history in the nineteenth and twentieth centuries. Treats primarily immigration from Europe, the European background to immigration, the immigrants' American experience, and American immigration policy, both past and present.

164IP. Proseminar on American Immigration History

(4) Bonadio

Prerequisite: History 164I or History 17B. May be repeated for credit to a maximum of eight units.

Research seminar on American immigration history in the nineteenth and twentieth centuries and the evolution of American immigration.

164Q. History of American Journalism

(4) Bonadio

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

A history of American journalism from nineteenth century to the present. Makes it possible to study evolution of journalism as a social institution and to interpret the major episodes in the development of American society through the press and the reporters who wrote for it.

165. America in the Gilded Age, 1876 to 1900

(4) Harris

Prerequisite: History 17B or upper-division standing.

The responses of American people and institutions to the opportunities and problems of industrialization and rapid social change in the late nineteenth century.

166A-B. Recent History of the United States

(4-4) Kalman

Prerequisite: any lower-division course in history or upper-division standing.

Political, economic, and social development of the United States from 1900 to the present time.

166P. Proseminar in Twentieth-Century History

(4) Kalman

Prerequisites: History 166A and 166B, preferably both. May be repeated for credit to a maximum of eight units.

A seminar for students who have completed History 166A-B and who wish to pursue research projects on aspects of twentieth-century American history.

167A. Rise of the American Marketplace

(4) Brownlee

Prerequisite: History 17A or upper-division standing.

American economic development to the Civil War, including the dynamics of European colonial expansion, the impact of mercantilism and the Revolution, the growth and redistribution of population, and the sources of early industrialization.

167B. Development of American Industrial Society: 1860 to Present

(4) Brownlee

Prerequisite: History 17B or 17C or upper-division standing.

Economic and social history of the United States associated with the continuing industrial transformation of the nation, emphasizing a dynamic population and the changing organizational basis of industrial society, including the development of the modern corporation and the welfare state.

167C. History of American Labor

(4) Brownlee, Garcia

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

An economic and social history of American labor, 1607 to present, treating patterns of economic and social opportunity, the structure and composition of the labor force (including the role of ethnic and racial minorities, women, and children), and the character of organized labor movements.

167D. History of American Business

(4) Brownlee

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

A survey of the history of business institutions in America, particularly since the rise of the corporate bureaucracies in the nineteenth century. Places business in context of development of both the economy and American society at large. Throughout, attention is paid to government-business relations.

167P. Proseminar in Economic History

(4) Brownlee

Prerequisite: History 167A or 167B or 167C. May be repeated for credit to a maximum of eight units.

A proseminar for students who have completed one other quarter of the History 167 series and wish to pursue independent inquiry into some aspect of the economic history of the United States.

168A-B. History of the Chicanos

(4-4) Garcia

Prerequisite: any quarter of History 17A-B-C, or any quarter of Chicano Studies 1A-B-C, or upper-division standing.

The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico.

168P. Proseminar in Chicano History

(4) Garcia

Prerequisites: History 168A or 168B, and consent of instructor. May be repeated for credit to a maximum of eight units.

Studies in selected aspects of Chicano history with an emphasis on social and economic history.

169A-B. Afro-American History

(4-4) Daniels

Prerequisite: any lower-division course in history or Black Studies, or upper-division standing.

A: History of Afro-Americans from Africa in ancient times to the U.S. in the mid-nineteenth century.

B: History of Afro-Americans from emancipation to the present.

169M. History of Afro-American Thought

(4) Staff

Prerequisites: History 169A-B; consent of instructor.

Study of the development of Afro-American thought from the 1860s to the 1960s as reflected in intellectual and popular media.

169P. Proseminar in Afro-American History

(4) Daniels

Prerequisite: History 169A or 169B or consent of instructor. May be repeated for credit to maximum of eight units.

Studies in nineteenth- and twentieth-century Afro-American history, with an emphasis on society, culture, and race relations.

171A-B. History of the Foreign Relations of the United States

(4-4) DeConde

Prerequisite: any lower-division course in history or upper-division standing.

A: The theory and practice of American foreign policy from colonial times to 1900.

B: Analysis of twentieth-century developments. Emphasis on broad policy, concepts, and ideas.

171P. Proseminar in American Diplomacy and Politics

(4) DeConde

Prerequisite: upper-division standing or consent of instructor. May be repeated for credit to a maximum of eight units.

This is a seminar that will focus on training in historical research methods. It will require an essay on some aspect of American history, most likely in the areas of diplomacy and politics, chosen jointly by the student and the instructor.

171Q. Readings and Discussions on Cold War History

(4) DeConde

Prerequisite: History 171B.

The course will revolve around books and essays concerning the theory and practice of American

foreign policy toward the Communist bloc during the era of the cold war, or approximately from 1945 to 1976. Although some written work is required, emphasis will be on dialogue between students and with the instructor.

172A-B. Politics and Public Policy in the United States.

(4-4) Kelley

Prerequisites: History 7, or any two quarters of History 17A-B-C, or upper-division standing.

The interaction of politics and public policy from the Revolution to the present, focusing upon the key issues of each era in social, economic, cultural, racial, and other policy areas. A particular concern for the policy-making process, ideology, and the cultural origins of politics.

172P. Public Policy Issues in the 1960s

(4) Kelley

Prerequisites: History 172A-B. May be repeated for credit to a maximum of eight units.

Proseminar in the history of public policy. A research seminar utilizing team research method to explore major policy questions in the Kennedy-Johnson-Nixon era.

173A-B. American Intellectual History

(4-4) Kelley, Nash

Prerequisites: any two quarters of History 17A-B-C or upper-division standing.

The evolution of the principal systems of thought concerning God, nature, humanity, and society from the colonial period to the present. The course will divide at the Civil War.

173Q. American Popular Culture

(4) Daniels

Prerequisite: any lower-division history or Black Studies course, History 173S, or upper-division standing.

Survey of history and developments in U.S. popular culture during the nineteenth and twentieth centuries, stressing the effects of circuses, carnivals, Wild West shows, music, films, radio, TV, and oral and written literature on American society and culture.

173S. American Popular Cultural History

(4) Nash

Prerequisite: History 17B or 17C or upper-division standing.

Traces the origins and development of popular culture in modern industrial America, 1860 to the present. Emphasis is on the ideas, attitudes, and values reflected in mass entertainment media such as popular literature, motion pictures, radio, television, and popular music.

173T. Wilderness and Civilization

(4) Nash

Prerequisite: any lower-division course in history or upper-division standing.

The course is concerned with defining wilderness, tracing the history of attitude toward it, analyzing its several values, understanding the threats to its existence, and studying its management and mismanagement.

174A-B. The Machine in America

(4-4) Pursell

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

Social history of devices and techniques, from handicraft through mass production to automation; invention, innovation, scientific research, and organization in such areas as agriculture, manufactures, transportation, warfare, and the urban environment.

174AH-BH. The Machine in America

(1-1) Pursell

Prerequisites: concurrent enrollment in History 174A or 174B, and consent of instructor. Limited enrollment.

A reading and discussion course supplementing History 174.

174E. Technological Nightmares

(4) Pursell

Prerequisite: upper-division standing only. Same course as German 174E.

The promise and terror of technological progress as reflected in literary documents of nineteenth and twentieth centuries; e.g., Mary Wollstonecraft-Shelley's *Frankenstein*, Meyrink's *Golem*, Kaiser's *Gas I*, Brecht's *Galileo*, Durrenmatt's *The Physicists*, Frisch's *Homo Faber*. These books will be related to the social history of technology.

174P. Proseminar in the History of the Built Environment

(4) Pursell

Prerequisite: upper-division standing only. May be repeated for credit to a maximum of eight units.

A research seminar on topics dealing with the built environment of Santa Barbara and environs. A research paper will be required.

175A-B. American Cultural History

(4-4) Kirker

Prerequisite: any lower-division course in history or upper-division standing.

The origin and development of a national character and culture since 1607; emphasis is upon the use of artifactual evidence, such as architecture, painting, and literature, in formulating historical interpretations regarding the American character and culture.

175P. Proseminar in American Cultural History

(4) Kirker

Prerequisite: History 175A or 175B. May be repeated for credit to a maximum of eight units. A research seminar on the use of artifacts in American cultural history.

176A-B. The American West

(4-4) Oglesby

Prerequisite: any lower-division course in history or upper-division standing.

The West as a frontier and as a region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

176P. Proseminar in the History of the American West

(4) Oglesby

Prerequisites: History 176A-B or consent of instructor. Enrollment is limited. May be repeated once for credit.

The study of special topics in the history of the American west.

177. History of California

(4) Staff

Prerequisite: any lower-division course in history or upper-division standing.

California as a case study of national trends, and as a unique setting with its special problems and culture.

177P. Proseminar in California History

(4) Oglesby

Prerequisite: History 177 or consent of instructor. May be repeated once for credit.

A research and writing seminar on the history of California.

178A-B. American Urban History

(4-4) Callow

Prerequisites: any two quarters of History 17A-B-C or upper-division standing.

A study of the political, economic, social, and intellectual impact of the city upon American history, and the impact of history upon the growth of American urbanization.

178M. History of American Urban Crime

(4) Callow

Prerequisite: any lower-division history course or upper-division standing.

The historical evolution of organized crime in the nineteenth and twentieth centuries: its structure, interpretations, ethnicity, illicit enterprises, and impact upon the American city.

178MP. Proseminar in American Urban History or American Urban Crime

(4) Callow

Prerequisite: upper-division standing. Limited to 12 students. May be repeated for credit to a maximum of eight units.

A research and writing seminar. The student will choose a topic in either American urban history or the history of American urban crime and write a paper.

178P. Proseminar in the History of Crime in the Cities of the United States

(4) Callow

Prerequisite: upper-division standing. Limited to 12 students. May be repeated for credit to a maximum of eight units.

A research and writing seminar. The student will write a paper on a topic involving the history of American urban crime.

178Q. Studies in American Urban History

(4) Callow

Prerequisites: History 178A-B or consent of instructor.

A reading and discussion course limited to ten students.

179. History of the American Indian

(4) Jacobs

Prerequisite: History 79FS or upper-division standing.

A lecture course on the history of American Indians, stressing pre-Columbian ethnohistorical themes, Indian history, and Indian-white relations. Chronology covers Indian history through modern times.

179D. The Native American Indian and the Frontier: Ideas and Interpretations

(4) Jacobs

Prerequisite: History 79FS, or any quarter of History 17A-B-C, or upper-division standing.

The role of the American Indian in United States history. A study of historical thought and interpretation concerning main currents of national development and the origins of American attitudes and policies toward America's native people. Lectures, readings, and discussions.

179P. Special Studies in American Indian History

(4) Jacobs

Prerequisite: History 179, 179D, or 17A. May be repeated for credit to a maximum of eight units. Research seminar in early American and frontier and Indian history.

179S. Films, Historic Paintings, Prints, and Photographs in American and in Frontier History

(4) Jacobs

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

An examination of the visual record of the American past which provides a new and sometimes unique interpretation of American history.

179T. Historical Preservation in America, Problems and Case Studies

(4) Jacobs

Prerequisite: any quarter of History 17A-B-C or upper-division standing.

The historical record of America's past: what we had, what we lost, and what we have preserved. Problems and case studies of history as told in the physical record of the territorial occupation of the U.S.

180. Southeast Asian History

(4) Hay

P/NP grading not allowed.

A survey of the history of the countries of Southeast Asia (Burma, Thailand, Malaysia, Vietnam, Indonesia, the Philippines, Cambodia, and Laos). A research paper will be required.

181P. Comparing the Soviet Union and the United States

(4) Hay

Prerequisites: upper-division standing and History 35 or 135B or 135C. May be repeated for credit to a maximum of eight units.

An undergraduate research seminar focusing on multidisciplinary comparisons between these two societies, cultures, economies, and governments — both independently and in interactions with each other.

183. Gandhi and Modern India

(4) Hay

The development and influence of Gandhi's ideas and methods in the contexts of Indo-British cultural and political life, Hindu-Muslim, interregional, and inter-caste tensions, and the creation of independent India and Pakistan. The contemporary relevance of Gandhi's principles and programs.

184A-B-C. China's Major Dynasties

(4-4-4) Chen

Prerequisite: upper-division standing.

In-depth study of the history of some important Chinese dynasties. (Offered periodically.)

A: Han dynasty China.

B: T'ang dynasty China.

C: Sung dynasty China.

184P. Proseminar in China's Major Dynasties

(4) Chen

Prerequisite: History 184A, 184B, or 184C. May be repeated for credit to a maximum of eight units.

Undergraduate research in Chinese history.

185A-B. Modern China

(4-4) Hsu

Prerequisite: any lower-division course in history or upper-division standing.

A: From 1600 to 1900.

B: From 1900 to date.

186A-B-C. History of China

(4-4-4) Chen

Prerequisite: upper-division standing.

A: Ancient China, to A.D. 200.

B: Medieval China, A.D. 200 to 1000.

C: Early Modern China, A.D. 1000 to 1600.

186P. Proseminar in History of China

(4) Chen

Prerequisite: History 186A, 186B, or 186C. May be repeated for credit to a maximum of eight units.

Undergraduate research in Chinese history.

187A. Japan under the Tokugawa Shoguns

(4) Smith

Prerequisite: upper-division standing.

A survey of Japanese social and cultural history from the seventeenth to the nineteenth century.

187B. Modern Japan

(4) Smith

Prerequisite: upper-division standing.

A survey history of Japan from the early nineteenth century until World War II, in an effort to explain how — and at what price — Japan became the first successful modernizer in the nonwestern world.

187C. Recent Japan

(4) Smith

Prerequisite: upper-division standing.

The history of Japan since World War II, dealing with the American occupation, economic recovery and growth, social change, and political development.

187P. Proseminar in Japanese History

(4) Smith

Prerequisite: any of the following: History 90, 187A, 187B, 187C, or consent of instructor. May be repeated for credit to a maximum of eight units.

A research seminar in Japanese history. Topics will vary depending on the interests and background of the participants. Reading knowledge of Japanese is not required.

188. History of Japanese Architecture and Urbanism

(4) Smith

Prerequisite: upper-division standing. Some background in either Japanese history or the history of western architecture is strongly recommended.

A historical approach to the built environment of Japan, emphasizing sacred spaces, residential architecture, garden design, and city planning.

189Q. Japan through American Eyes

(4) Smith

Prerequisite: upper-division standing or consent of instructor.

A reading and research seminar on modern Japan as seen through American travel accounts, novels, and cultural borrowings from Japan.

190A. China's Social and Institutional History

(4) Chen

Prerequisite: upper-division standing.

A study of China's changing society, in pre-imperial, imperial, late imperial, and modern eras and its relationship with some important institutions such as land tenure, education and examination system, central and local government organization, ancestor-cult and clan.

190B. Problems in Chinese History

(4) Chen

Prerequisite: upper-division standing.

Studies on selected topics of traditional China.

190C. History of Chinese Thought

(4) Chen

Prerequisite: upper-division standing.

A study of the development of Chinese thought from Confucius to Mao Tse-tung.

191. Public History

(4) Staff

Prerequisites: History 17A-B-C.

Topical history course to explore the new field of public history, heretofore limited to graduate students. Course will explore different sectors of public history which include preservation, government, business, research organizations, media, historical societies and museums, archives, and teaching of public history. (Original case studies and reading materials will be prepared since at present no textbook exists.)

191E. Community and Family History

(4) Staff

This course will provide practical instruction for students interested in researching and writing the history of their community, neighborhood, or family. A survey of conceptual and methodological writings will be combined with research and writing case studies and assignments.

192. Truth and Fiction: A Century of German History in Literature

(4) Remak

Prerequisite: History 4C or an upper-division course in modern European history or German literature. Same course as German 192.

German history, 1870-1971, as reflected in German literature. Tentative list of authors to be read: Fontane, Grillparzer, George, Hofmannstahl, Roth, Plievier, Brecht, Hochhuth, Johnson.

193A. Twentieth-Century Germany: Kaiser to Hitler

(4) Remak

Prerequisite: History 4C or upper-division standing.

A political and cultural history of Germany from the turn of the century to 1933; the roots of national socialism.

193B. Twentieth-Century Germany: The Nazi Years

(4) Remak

Prerequisite: History 4C or upper-division standing.

A history of Germany from the rise of Hitler to the capitulation of 1945, and of the public and private face of national socialism — its origins, its ideology, and its practices.

193P. Studies in Twentieth-Century Germany

(4) Remak

Prerequisite: History 193A or 193B. May be repeated for credit to a maximum of eight units. An undergraduate seminar to explore in greater depth some of the problems — both general and specific — of modern German history.

195H. Senior Honors Seminar

(4-4-4) Staff

Prerequisite: admission to senior honors program. Twelve units of credit will be awarded at the end of the three quarters of the seminar. If a student is unable to complete the three quarters of seminar, a maximum of four units of credit will be given. The 12 units earned in this seminar will not apply to the upper-division units required of all majors.

A three-quarter seminar, to be conducted as outline in the description of the senior honors program. Honors candidates will write a senior thesis on a research topic of suitable depth and sophistication.

195IA-IB. Senior Thesis — Public Policy

(4-4) Staff

Prerequisites: admission to major in history of public policy, and completion of junior-year studies; consent of instructor. Students should enroll by instructor number. Eight units of credit will be awarded at the end of two quarters assigned for the thesis. This is a two-quarter in-progress course with letter grade issued for both quarters upon completion of History 195IB. A two-quarter individual research project, under the direction of a history professor selected with the advice of the departmental adviser to public policy students.

196. Internship in History

(2-8) Staff

Prerequisites: upper-division standing, 3.0 grade-point average, and department approval. The course is graded P/NP and must be taken in conjunction with History 199, for which a

written project related to the internship experience must be completed. May not be repeated.

This course enables students to obtain credit for history-related internship experience, such as in the Capitol Hill or Sacramento programs.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in history. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Students must be majors in history or present justification to both the instructor and the department for diverting from this norm. No more than eight units of History 199 may be applied to the majors in history or the History of Public Policy.

The description of any one 199 must not be identical to any existing course description.

GRADUATE COURSES**200E-AM-LA-AS-AF-ME. Historical Literature**

(4) Staff

May be taken more than once.

E-Europe; AM-America; LA-Latin America; AS-Asia; AF-Africa; ME-Middle East.

A reading course in a general area of history, specifically designed to prepare M.A. candidates for their comprehensive examination fields, but also appropriate for Ph.D. students seeking broad preparation. Introduces the student to the sources, historiography, and general literature of the field in question.

201E-AM-LA-AS-AF-ME. Advanced Historical Literature

(4) Staff

May be taken more than once. Open to both M.A. and Ph.D. candidates.

E-Europe; AM-America; LA-Latin America; AS-Asia; AF-Africa; ME-Middle East.

A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor. (Usually offered quarterly.)

201PP. Advanced Historical Literature

(4) Staff

A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of field in question. Written work as prescribed by the instructor.

202. Proseminar in Historical Methods

(4) Staff

Normally required of all entering M.A. candidates other than those in public history. Open to other students on a space available basis.

A general introduction to selected historiographical issues and historical methods. (Offered every fall quarter.)

203. Research Seminar in American Historiography

(4) Jacobs

Emphasis is on the writings of the great chroniclers of American history. One research paper is prepared.

204. Historiography and Philosophy of History

(4-4) Marsak

The nature of history and historical writing as revealed by major European and American historians followed by a consideration of theories of

historical inquiry — metaphysics, methodology, meaning, and morality of history.

205. Public Historical Studies

(1-4) Kelley, Pursell

Prerequisite: admission to graduate program in *Public Historical Studies*.

To acquaint students with relevant research methods (oral history, legal research, family history, government documents and sources, historical preservation, field research).

206. Land Use Planning and American Intergovernmental Relations

(4)

This course will examine land use planning in America from the beginning of zoning to the present “quiet revolution” in land-use controls. Essential background will be the history of recent (twentieth century) changes in inter-governmental relations within the American federalist system. (Usually offered annually.)

207. Historical Methods and the Social Sciences

(4) Brownlee, Harris, Cohen

Exploration of the application of social science theory and methodology, including quantitative analysis, to the historical study of social structure and mobility, demographic change, distribution of political power, voting behavior, legislative behavior, interaction of public policy and economic development, and distribution of income and wealth. (Usually offered annually in the fall.)

208. Problems of Historical Preservation

(4) Jacobs, Oglesby

Prerequisite: graduate standing.

Problems of historical preservation using archives, museums, and historic sites and buildings of the Santa Barbara area as a laboratory.

209. The Academic Profession of History

(4) Staff

A colloquium which explores the history and nature of the American university, seen comparatively, and the nature and history of the work-life and role of professors of history, with attention to ethical issues, the historical community, and the vocation of scholar-teacher.

211. Seminar in Greek History

(4-4) Frost

Prerequisite: reading knowledge of French, German or Italian.

Research seminar in Greek history. From time to time the seminar will be limited to candidates specializing in ancient history, and with a reading knowledge of classical Greek.

212A-B. Archeology and Maritime History

(4-4) Frost

Prerequisite: reading knowledge of one foreign language.

Case studies in the application of archeological methodology to the history of seafaring.

213. Seminar in Roman History

(4-4) Drake

Prerequisite: reading knowledge of appropriate foreign language.

Selected topics in the history of the Roman Republic and Empire, with particular emphasis on problems of the later Roman Empire.

214. Seminar in Medieval Church History

(4-4) Russell

Prerequisites: graduate status and consent of instructor.

Research seminar in the medieval church, especially movements of dissent and the history of concepts.

215. Seminar in Medieval History

(4-4) Hollister

Prerequisite: History 116.

A two-quarter course.

216A. Colloquium in Community History

(4) Harris

A reading course that explores a broad array of historical and social science approaches to the study of the community.

216B-C. Seminar in Community History

(4-4) Staff

Designed to introduce M.A. and Ph.D. candidates to basic problems of doing ongoing research in community history; will examine role and activities of individuals, groups, institutions, associations, and corporations. Each year a different basic problem will be identified and students will carry out a research project as a team. Research will be carried out in Santa Barbara, with a close liaison with the Santa Barbara Historical Society.

217A. Colloquium in Cultural Resource Management

(4) Pursell

Colloquium in cultural resource management. A course of intensive readings in the identification, preservation, and interpretation of cultural resources. Includes such topics as cultural surveys, historic preservation, and impact mitigation.

217B-C. Seminar in Cultural Resource Management

(4-4) Pursell

A two-quarter research seminar involving team research and publication of results. Projects will include such tasks as cultural surveys, determination of significance, eligibility for inclusion on National Register, impact mitigation, and historic preservation.

218A. Colloquium in Public Policy

(4) Staff

An intensive reading course in the development and elaboration of public policy formation and administration.

218B-C. Seminar in Public Policy

(4-4) Staff

A two-quarter research seminar in the development and administration of public policy.

219. Seminar in Women and Public Policy

(4) Cohen

Prerequisite: graduate standing or consent of instructor.

The history of women's participation in government and the history of public policies relating to gender in twentieth-century America.

220. Seminar in Renaissance-Reformation

(4-4) Friesen

Prerequisite: reading knowledge of one western European language besides English.

A two-quarter research seminar, stressing problems in comparative European social and intellectual history, 1450 to 1650. (Offered periodically.)

222. Seminar in Eighteenth-Century European History

(4-4)

Prerequisite: graduate standing or consent of instructor.

Selected topics in the history of Europe, 1715 to 1815.

223. Seminar in Modern European History

(4-4) Remak

Prerequisite: graduate standing. May be taken more than once.

225. Topics in the European Enlightenment

(4-4) Marsak

Prerequisite: a reading knowledge of at least one foreign language.

Science and social philosophy, 1650 to 1850.

227. Research Seminar in European Socialism, Nineteenth and Twentieth Centuries.

(4-4) Lindemann

A two-quarter course. (Offered irregularly.)

229. Seminar in Seventeenth-Century European History

(4-4) Sonnino

A two-quarter course.

235. Seminar in Russian History

(4-4) Burbank

Prerequisite: reading knowledge of Russian, German, or French, or consent of instructor.

236. Seminar in Southeast European History

(4-4) Djordjevic

A two-quarter research seminar including discussion of topics in modern Balkan history and the Eastern question, individual research, and final paper.

237. Seminar in Modern German History

(4-4) Remak

238. War Studies

(4-4) Talbott

Prerequisites: Open to qualified undergraduates with consent of instructor.

A two-quarter research seminar on topics in war, the state, and society since 1789. Origins and consequences of wars and the political, social, and economic aspects of both land and sea warfare will be considered.

239A-B. Seminar in the History of the British Empire and the Commonwealth

(4-4) Huttenback

Prerequisite: graduate standing or consent of instructor.

A two-quarter research seminar on social, political, and economic aspects of British imperial history.

240. Seminar in Tudor-Stuart History

(4-4) McGee

Research seminar in Tudor-Stuart history; selected topics requiring use and interpretation of primary sources. (Offered infrequently.)

241. Seminar in Modern British History

(4-4) Gollin

A two-quarter research seminar. (Usually offered in fall and winter quarters.)

242. Seminar in Early Twentieth-Century British History

(4-4)

Prerequisite: consent of instructor.

246. Seminar in the Modern History of the Middle East

(4) Gallagher

Prerequisite: History 146A or 146B.

Research seminar stressing the movements of nationalism, revolution, and change that have characterized the modern history of the Middle East since 1850.

247. Afro-American History Research Seminar

(4-4) Daniels

Prerequisites: History 169A-B or directed readings.

This course will provide students opportunity to research in primary source materials in Afro-

American history from colonial times to the present and write a research paper. Focus will be Afro-American in the United States, and to a lesser degree, elsewhere.

248. Research Seminar in African History
(4-4) Collins

Prerequisite: History 201.

Designed to provide graduate students with the opportunity to explore in depth one or more of the subjects with which they have become acquainted in History 201. (Usually offered annually in fall-winter sequence.)

249A-B. Seminar in Chicano History

(4-4) Garcia

This two-quarter research seminar will explore various facets of Chicano history, but will concentrate on the twentieth century. Besides examination of the literature, research projects will cover immigration, labor, women, the Mexican-American generation, and the Chicano movement.

250. Seminar in Spain and Spanish Empire

(4-4)

Prerequisites: graduate standing or consent of instructor; reading knowledge of Spanish.

252. Seminar in Social and Intellectual History of Modern Latin America

(4-4)

Prerequisites: History 201; History 151B-C, History 152B or consent of instructor.

Seminar on nationalism in Latin America.

253. Special Seminar in Latin American History

(4-4) Rock

A two-quarter seminar. Available on demand.

Discussion meetings for postgraduates. Reading, research, and writing in the history of Latin America in subject of student's choice.

254. Latin America, Spain, and Portugal

(4-4) Dutra

Prerequisite: reading knowledge of Spanish or Portuguese required (in special cases, French, German, Dutch, or Italian acceptable.)

Individual reading, research, and writing in the history of Spain, Portugal, and their empires in the Americas, Africa, and Asia. For Brazil and Mexico, national periods included.

256A-B. Seminar in Mexican History

(4-4) Cline

Prerequisites: graduate standing or consent of instructor; reading knowledge of Spanish. This is a two-quarter in-progress course with grades for both quarters issued upon completion of History 256B.

A two-quarter seminar on selected topics in the socioeconomic history of colonial Mexico.

257. Seminar in Luso-Brazilian History

(4-4) Dutra

Research seminar with particular stress on Portuguese, Spanish, and Brazilian archival materials. Course will provide graduate students with opportunity to analyze problems in the history of Portugal and her overseas empire with special emphasis on Brazil.

259. Seminar in American Social History

(4-4) Cohen

A two-quarter research seminar on selected topics in the "new" social history, including the history of women and the family. (Offered infrequently.)

260. Seminar in American South

(4-4) Harris

Research in nineteenth- and twentieth-century Southern history.

261. Seminar in Colonial America, the Frontier, and the Indian

(4-4) Jacobs

(Usually offered in fall and winter quarters.)

262. Seminar in Early National Period of United States History

(4-4) Borden

263. American Immigration

(4-4) Bonadio

A research seminar in the history of American immigration, particularly during the nineteenth and early twentieth centuries.

264. Seminar in Civil War and Reconstruction

(4-4) Bonadio

265. Seminar in American Political and Social History

(4-4) Harris

Research in selected historical problems, focusing on analysis of political behavior, social structure, and social mobility. (Usually offered biannually in winter and spring.)

266. Seminar in Recent History of the United States

(4-4) Kalman

Offered periodically.

267. Seminar in American Economic History

(4-4) Brownlee

(Usually offered annually in winter-spring sequence.)

268A-B. Seminar on Ethnicity and Community

(4-4) Garcia

Prerequisites: open to qualified undergraduates with consent of instructor.

A two-quarter research seminar on historical development of ethnic communities in the United States. Focus on community institutions such as the family, the church, voluntary associations, and the ethnic press. Particular research emphasis will be on Santa Barbara and Southern California ethnic communities.

269. Seminar in American Urban History

(4-4) Callow

Student must take two consecutive quarters.

270. Seminar in Tangible Resources — Environmental History

(4) Nash

Study of the value and management of the visible past. Emphasis on the ways public agencies like the National Park Service designate and display historic buildings, trails, villages, and ways of life. Mandatory and optional field trips. Career opportunities stressed.

271. Seminar in Diplomatic and Political History of the United States

(4-4) DeConde

(Usually offered annually in winter and spring quarters.)

272. The History of American Public Policy

(4-4) Kelley

Prerequisites: History 172A-B or consent of instructor. A two-quarter seminar.

Since the Civil War. By means of case studies, explores the policy-making process; examines links to party ideology and cultural influences; and compares original policy intentions with actual results following implementation.

273. Research Seminar in American Social and Intellectual History

(4-4) Nash

(Offered periodically.)

274. History of Science and Technology in America

(4-4) Pursell

Prerequisite: consent of instructor.

Research seminar emphasizing the social aspects of selected topics in the history of science and technology in America. (Offered irregularly.)

275. American Cultural History

(4-4) Kirker

(Offered infrequently.)

276. Seminar in American West and California

(4-4) Oglesby

Student must take two consecutive quarters.

277. Topics in the History of Science

(4-4) Badash

Research seminar selected from such topics as Babylonian astronomy, Greek science, Age of Newton, rise of modern physics, scientific instruments, nationalism/internationalism in science, science and society, sociology of science, public conceptions of science, organization and profession of science. (Offered periodically.)

278. Science in Twentieth-Century America

(4-4) Badash

The atomic age—the background to the atomic bomb, its development, use, and postwar problems. (Offered periodically.)

279. Research Seminar in History of American Business

(4) Brownlee

Readings in the history of American business. The course surveys market strategies, the development of corporate hierarchies, the role of the economic, cultural, and political environments shaping business behavior, and the effect of business on both the economy and American society at large.

280. Seminar in Modern China

(4-4) Hsu

Prerequisites: History 185A-B.

A research seminar in the important aspects of modern Chinese history. (Offered annually.)

281. Politics and Culture in the Gandhian Era

(4) Hay

Prerequisites: History 181A-B.

A two-quarter research seminar devoted to the period 1919 to 1948 in the history of India and Pakistan.

284. Seminar in the History of Chinese Thought

(4-4) Chen

Prerequisites: History 19 or 186A-B, or consent of instructor.

Selected studies of leading thinkers on important schools of thought. A two-quarter seminar.

285. Seminar in United States Relations with the Far East

(4-4) Hsu

Prerequisites: History 185A-B, or 187A-B.

A two-quarter research seminar, with particular stress on the use of archival materials. The role of the United States in the development of the modern Far East is emphasized. (Offered irregularly.)

286. Seminar in Premodern Chinese History

(4-4) Chen

Prerequisites: History 86 or 87, or 186A-B-C, or consent of instructor.

Research on special topics on ancient, medieval, or early modern China. A two-quarter seminar.

288. Seminar in Japanese History

(4-4) Smith

Prerequisite: consent of instructor.

A two-quarter research seminar on selected problems in Japanese history. Some working knowledge of the Japanese language desirable but not necessary.

291. Seminar in American Legal History 1890 to 1960

(4) Kalman

Prerequisite: consent of instructor. Open to undergraduates with consent of the instructor.

A survey of American legal history from 1890 to the present, with special emphasis on the Supreme Court, legal theory, legal education and private law.

*The following courses are reserved for advanced study and research:***500. Laboratory for Teaching Assistants**

(2-4) Staff

Units do not apply toward completion of the Ph.D. requirement. Required each quarter for teaching assistants.

Subject oriented, designed to relate directly to the teaching of a particular course in progress, to improve the skills and effectiveness of the department's teaching assistants.

501. The Art of Teaching History

(2-4) Staff

Prerequisites: graduate standing, admission to Ph.D. program or M.A. destined for postsecondary teaching. Units do not apply toward completion of graduate degree.

A seminar course on the art and methods of teaching history including practical experience in the classroom. Audiovisual aids will be used in evaluating teaching techniques. Graduate students who wish to become teaching assistants are strongly advised to take this course.

502. Research Practicum

(2-4) Staff

Units do not apply toward completion of graduate degree.

Directed research in history for research assistants, etc.

503. Tools of Historical Research

(2-4) Staff

Units do not apply toward completion of graduate degree.

Auxiliaries to the study of history including paleography, computer languages, computer editing, foreign language, archival techniques, statistics, textual criticism, bibliographical tools, and other related techniques.

594AA-ZZ. Special Topics

(4) Staff

May be taken more than once.

Special seminar on research subjects of current interest

596. Directed Reading and Research

(2-12) Staff

Prerequisites: graduate standing and consent of instructor. Minimum of two units per quarter.

Individual tutorial. Instructor usually student's major professor. Each faculty member has a unique letter designation available from graduate secretary.

597. Independent Study for Master's Comprehensive Examinations and Ph.D. Examinations

(2-12) Staff

*No Unit credit allowed toward advanced degree.***598. Master's Thesis Research and Preparation**

(2-12) Staff

Prerequisites: graduate standing and consent of instructor.

Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee. Each faculty member has a unique letter designation available from graduate secretary.

599AA-ZZ. Ph.D. Dissertation Preparation

(2-12) Staff

Prerequisites: graduate standing and consent of instructor.

Only for writing the dissertation. Instructor should be the chair of the student's doctoral committee. Each faculty member has a unique letter designation available from graduate secretary.

Interdisciplinary Courses

1. Library Skills

(1)

Available P/NP only; may not be repeated for credit.

Course designed to assist entering students in learning to use effectively essential facilities and resources of the UCSB Library. Course is self-paced and does not meet regularly. Students must satisfactorily complete workbook and pass final exam.

5. A Survey of Computing for the Arts and Humanities

(4) Marcus

An introduction to computing for students in the arts and humanities. BASIC, PASCAL, applications programs. Course will use the UCSB Microcomputer Laboratory.

10. Introduction to Grammatical Categories and Analysis

(2) Hetzron

Introduction to the college level study of foreign languages from a linguistic point of view. Survey of grammatical categories, grammatical syntactic analysis, illustrated, when possible, through English. Clarification of concepts to provide the needed common ground for college students of languages, linguistics, and English.

15A-B. Energy in the Modern World.

(3-3)

Prerequisite: Interdisciplinary 15A is prerequisite to 15B.

An overview of the scientific and economic aspects of the energy problem in the United States. The basic physics of energy — its generation, conversion, and distribution — will be interleaved with the basic economics necessary to understand the factors involved in the formulation of public policy. This course will be taught jointly by the Department of Economics and Physics.

40. Introduction to Human Consciousness

(4) Scheff, Mahlendorf

Study of the raw materials of human consciousness (thoughts, memories, feelings) and of their expression (symbolic, symptomatic, overt, covert). Selected literary and psychoanalytic texts will serve as source materials (Freud, Lewis, Salaman, Goethe, Rilke, Grass).

41. Seminar on Human Consciousness

(4) Scheff, Mahlendorf

Prerequisite: Interdisciplinary 40. Each year course will cover a different topic. May be taken up to four times.

Analysis of narratives of individual experience. Presentation of written assignments to seminar. Evaluation of relation of spoken and written performance.

60. Introduction to Folklore

(4) Staff

Introduction to folklore genres with a multicultural perspective. Definitions, theories, collection of folklore. Proverb. Riddle. Children's folklore. Folktale. Legend. Myth.

100. Library Research Bibliography I

(2)

Available P/NP only; may not be repeated for credit.

The goal is to develop a high level of library competence. A critically annotated and extensive bibliography is a central course requirement. The course is recommended for students concurrently registered in any course which has a research project requirement.

106. The Picaresque Novel in Western Europe and America

(4) Hoffmeister

*Prerequisite: upper-division standing or consent of instructor.*An interdisciplinary course about the rise of the rogue's novel in Spain and its transformation in various national literatures; combining an overview of theoretical problems with the close interpretation of masterpieces of this genre from *Lazarillo de Tormes* to Saul Bellow's *The Adventures of Augie March*. Taught in English.**197A-B. Global Peace and Security**

(2-2) Staff

Prerequisite: upper-division standing.

A: Fundamental issues relating to global peace and security: historical, political, economic, technical, military, environmental, ethical, and sociological. Preliminary planning of essay. Required for certificate in Global Peace and Security. B: Continuation of Interdisciplinary 197A. Increased emphasis on the preparation of the required essay.

200. Seminar in Topics in Cognitive Science

(3) Pellegrino

Prerequisites: consent of instructor. Graduate students only. Each quarter will cover a different topic or set of issues.

In-depth consideration of issues concerning specific topics in cognitive science. Specific focus determined by instructor each time course is offered.

SEE ALSO:**Black Studies 4. Africa Survey**

See listing under Black Studies.

Medieval Studies 100. Aspects of Medieval Civilization

See listing under Medieval Studies.

Medieval Studies 199. Independent Studies in Medieval Studies

See listing under Medieval Studies.

Renaissance Studies 100. Studies in Renaissance Civilization

See listing under Renaissance Studies.

Renaissance Studies 199. Independent Studies in the Renaissance

See listing under Renaissance Studies.

Latin American and Iberian Studies

Program in Latin American and Iberian Studies, Ellison Hall 5843; Telephone (805) 961-2726 or 961-2991. Program Chair: S.L. Cline

Advisory Committee

S.L. Cline, Ph.D. (History)
Francis A. Dutra, Ph.D. (History)
Ramon Favela, Ph.D. (Art History/Chicano Studies)
Victor Fuentes, Ph.D. (Spanish)
Hector Lindo-Fuentes, Ph.D. (History)
Juan Vicente Palerm, Ph.D. (Anthropology, Center for Chicano Studies)
Giorgio Perissinotto, Ph.D. (Spanish)
David P. Rock, Ph.D. (History)
Federico Subervi, Ph.D. (Communication Studies)
Ines Talamantez, Ph.D. (Religious Studies)
Barbara Voorhies, Ph.D. (Anthropology)
Frederick Williams, Ph.D. (Spanish and Portuguese)

The Program in Latin American and Iberian Studies offers interdisciplinary training leading to the Bachelor of Arts and Master of Arts degrees. The undergraduate program is designed for students broadly interested in the areas, those interested in the culture and art, those planning professional careers in business or government, those entering the teaching profession in fields such as language or social science, and those planning further academic study of Latin America, Spain, or Portugal.

Latin American and Iberian Studies may be taken as part of a double major in combination with another discipline such as history, anthropology, or economics, subject to an eight-unit limit on overlapping upper-division courses.

Students are encouraged to study abroad in Brazil, Mexico, Peru, or Spain through the university's Education Abroad Program. Other opportunities for earning academic credit are through study at other universities in Latin America, Spain, or Portugal for which transfer credit may be given.

Subject to prior approval by the advisory committee, students may receive academic credit for an internship in an international or development agency or other relevant employment. The internship will be done in conjunction with an independent study course supervised by a faculty member.

Seniors who have maintained a 3.6 average in courses in the major are eligible for the honors program. With approval of the chair, students will select an adviser who will direct the project. In two quarters, the student will pursue research and writing on a topic of importance and complexity, which results in an honors thesis.

After completing specific prerequisites, students with a bachelor's degree in Latin American and

Iberian Studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Latin American and Iberian Studies Annual Lecture. The advisory committee sponsors an annual lecture by a distinguished visiting lecturer.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Latin American and Iberian Studies

Preparation for the major. Spanish 6, or Portuguese 6, or a written translation test from Spanish or Portuguese into English. Native-speaking knowledge of the language, or credit in courses taken elsewhere demanding a comparable level of proficiency, will be considered equivalent. History 8 is a requirement in preparation for the major.

Upper-division major. A minimum of 40 units, including Latin American and Iberian Studies 100, Undergraduate Proseminar (4 units), at least 16 upper-division units in one of the four areas below, and the other 20 to be distributed among the other three areas, with a minimum of one course in each area.

Area 1.

Social Sciences: Anthropology 122, 130, 133, 134, 135, 137, 141, 148A-B, 163B, 164, 165, 170, 190, 193, 194; Chicano Studies 106, 115, 120, 130A-B, 131, 138, 139, 140, 141, 144 150A-B-C, 164, 170A-B, 171, 172, 174, 175, 178, 189, 194, 197; Communication Studies 135, 161; Economics 114, 180, 181, 190; Environmental Studies 122, 130A-B-C; Linguistics 130, 131, 175; Political Science 105, 109, 132, 134, 148A-B, 174; Portuguese 125A-B; Religious Studies 105, 114A-B-C-D, 126; Sociology 123, 125, 128, 129, 134, 144, 150, 156; Spanish 119A-B.

Area 2.

Art History, Music, and Film: Art History 154B-C, 161C-D-E, 163B; Chicano Studies 142, 143, 145, 146, 147, 186A-B, 195; Music 116A-B; Portuguese 128; Sociology 134F; Spanish 126, 127.

Area 3.

History: Chicano Studies 105, 168A-B, 169; History 108P, 150A-B-Q, 151A-B-C, 152A-B-C, 153F-LP-P, 154A-B-P, 155A-B-P, 156A-B-P-Q, 157A-B-C-P, 158, 168P-Q.

Area 4.

Literature: Black Studies 133B; Chicano Studies 137, 180, 181, 187, 188A-B-C, 190; Portuguese 102A-B, 105A-B-C, 106A-B-C, 114, 115, 120, 132A-B, 150AA-ZZ, 170, 180, 183AA-ZZ, 184AA-ZZ, 185, 189; Spanish 100, 101, 102A-B-C, 103, 104, 105, 106, 107, 108A-B-C, 109, 110A-B-C-D, 111A-B-C, 112, 114A-B-C, 116, 117, 118, 121A-B, 122A-B, 123A-B, 131A-B, 132, 134, 136, 137A-B, 138, 140A-B, 141, 142, 150, 161, 165, 170, 171, 183AA-ZZ, 184, 185, 187A-B, 188, 189, 191, 192.

The remaining 20 units may be chosen from the list above or from the following supplementary list. At least 16 of the 20 must be upper-division:

GRADUATE PROGRAM

Master of Arts — Latin American and Iberian Studies

The M.A. in Latin American and Iberian Studies is designed for students wishing to pursue an interdisciplinary degree at the immediate post-baccalaureate level. While there is no doctoral program

in Latin American and Iberian Studies, many successful graduates of the M.A. program pursue doctoral study in traditional academic departments such as anthropology, communication studies, economics, history, literature, or political science or enter professional schools to study business administration, education, law, or public health. The broad, interdisciplinary nature of the program allows students a great deal of scope to define and develop special interests.

Admission

Students who wish to pursue work toward the M.A. in Latin American and Iberian Studies must meet the general requirements for admission to graduate standing. Completion of the undergraduate major in Latin American and Iberian Studies is desirable but not necessary. Undergraduate deficiencies as stipulated by the Latin American and Iberian Studies committee must be remedied within the first year and do not count toward the minimum course requirements for completion of the M.A.

Language Requirement

A strong reading knowledge of Spanish or Portuguese is absolutely required. The student must show proficiency in either language through courses taken or through a reading examination. It is expected that the candidate will satisfy this requirement during the first quarter of the graduate program. In no case may a student take the comprehensive examination or submit a thesis until the foreign language requirement has been met.

Degree Requirements

Students will plan their programs with an adviser in their major area of concentration, selected from the affiliated faculty and with the approval of the chair.

All graduate students are required to take the proseminar in Latin American and Iberian Studies. The course has two purposes. It is designed (1) to provide a broad overview of the fields available at UCSB and (2) to provide insight into the particular interests and approaches of the faculty who teach Latin American and Iberian courses at UCSB. The presentations by UCSB faculty will allow graduate students to select an adviser and to find promptly an area of interest for their continued studies in the program.

Two M.A. plans are available. Under Plan 1, at least 32 units of upper-division and graduate course work in Latin American and Iberian Studies plus a thesis (6 additional units, Latin American and Iberian Studies 598) are required. The 32 units must include no fewer than 20 units at the graduate level. The distribution of units should be 16 units in the major area (department) of concentration, 8 units in the second area of concentration, and the remaining 8 units from two other areas. Students wishing to write a thesis must carefully prepare a proposal, including provisions for funding of any field research. The thesis proposal must be approved by a thesis committee. The final draft of the thesis itself must be approved by that committee, and by the chair of Latin American and Iberian Studies. Under Plan 2, at least 36 units of upper-division and graduate course work in Latin American and Iberian studies are required, including no fewer than 24 units at the graduate level. Distribution of courses should be 16 units in one area (department), 12 units in a second area, and the remaining 8 units in two other areas. A comprehensive examination will be required, based on course work and on a reading list previously approved by the adviser in consultation with the chair.

Graduate Courses in the M.A. Program

Anthropology 209, 225, 235, 236, 237B, 238; Art History 254, 262A-B-C, 254; Communication Studies 235; Economics 214A-B, 280A-B; Education 270AE-B-D-F-G-H, 274; History 200LA, 201LA, 249A-B, 250, 252, 253, 254, 256, 257, 268A-B; Latin American and Iberian Studies 200 (proseminar); Linguistics 240; Music 274A; Political Science 282A-B; Portuguese 205A-B-C, 206A-B-C, 221A-B, 222, 232A-B, 240, 245, 250, 255, 260, 265, 283, 294A-B, 295A-B; Spanish 200, 202, 207, 209, 210A-B-C, 211A-B-C, 212A-B, 213, 214, 218, 221A-B, 222A-B, 224A-B, 230A-B-C-D-E-F, 240A-B, 245, 260, 270, 275, 280, 283, 285, 290, 294A-B, 295A-B, 296A-B.

LATIN AMERICAN AND IBERIAN STUDIES COURSES

UPPER DIVISION

100. Proseminar

(4) Staff

Prerequisite: upper-division standing. *Required for all majors in the program.*

Designed to acquaint students with current research on the main areas of Latin American and Iberian Studies.

195A-B. Senior Honors Thesis

(4-4) Staff

Prerequisites: admission to honors program, 3.6 grade-point average for courses in Latin American and Iberian Studies, consent of program chair. *Eight units credit will be awarded at the end of two quarters. This is a two-quarter in-progress course with letter grade for both quarters assigned upon completion of 195B.*

A two-quarter research project, under the direction of a faculty member associated with the Latin American and Iberian Studies program. Students will write a major interdisciplinary research paper on a topic of sufficient depth and sophistication.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in core program of the major. *Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. May be repeated to a maximum of eight units. The description of any one 199 must not be identical to any existing course description.*

GRADUATE COURSES

200. Proseminar

(4) Staff

Required for all graduate students in the program.

Designed to acquaint students with current research on the main areas of Latin American and Iberian Studies as well as the faculty associated with the program.

598. Master's Thesis Research and Preparation

(1-6) Staff

Prerequisites: fulfillment of all graduate requirements except the thesis.

Only for research and writing of the thesis, under the direction of a faculty member in the program and with the approval of the chair.

Law and Society

Law and Society, Ellison Hall 3724; Telephone (805) 961-2114. Program Chair: Gayle Binion.

Advisory Committee

Stanley V. Anderson, Ph.D. (Political Science)
Sarah Berk, Ph.D. (Sociology)
Gayle Binion, Ph.D. (Political Science)
Herbert Fingarette, Ph.D. (Philosophy)
Laura Kalman, Ph.D. (History)
Dean E. Mann, Ph.D. (Political Science)
Mattison Mines, Ph.D. (Anthropology)
Llad Phillips, Ph.D. (Economics)
Thomas Schrock, Ph.D. (Political Science)

The law and society major seeks to understand the nature of law and legal institutions from a variety of perspectives. The program is interdisciplinary, and is designed to benefit both the student who desires a liberal education and the student who intends to enter graduate or law school.

In addition to the basic major, the program offers an emphasis in criminal justice, stressing the study of criminal justice as a social science. The criminal justice emphasis is supplemental to the basic major and requires an additional 12 units of upper-division course work. Successful candidates will have the emphasis noted on their transcripts and recognized on their diplomas. The law and society undergraduate adviser is available on a regular basis to assist students with questions related to all academic matters, including the honors program.

Graduates of the law and society major have entered careers ranging from urban planning, court management, probation, counseling, and legal practice, to federal, state, and local government service. Various professional programs are open to law and society majors, including advanced degree programs in judicial administration and the social sciences, paraprofessional legal training, and law school.

After completing specific prerequisites, students with a bachelor's degree in law and society are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Bachelor of Arts — Law and Society

Preparation for the major. Core course requirements: Philosophy 3; Political Science 12 or 100, Sociology 1 or 101, Law and Society 1. Elective requirements (three courses from the following): Anthropology 2; Economics 1, 2, or 109; Environmental Studies 11; History 4A-B-C, 17A-B-C; Philosophy 7, 20A-B-C; Political Science 1, 2, 3, 25; Psychology 1 or 101; Religious Studies 8; Sociology 3.

Upper-division major. Forty-eight upper-division units, distributed as follows. Core course requirements: Philosophy 100A, Political Science 115, Sociology 173. Component course requirements: six of the following, with at least one course from each group. Group 1 (Philosophy 191, 192, 193; Political Science 117); Group 2 (Law and Society 190; Political Science 165, 166, 167, 168); Group 3 (Sociology 172, 174, 175). Elective requirements: three courses from the following: Anthropology 114, 115; Chicano Studies 164, 172, Economics 160; Environmental Studies 125, 126A-B; History 178K, 178M; Law

and Society 100, 192, 194, 199; Philosophy 121, 122; Political Science 125, 175, 181; Psychology 103; Religious Studies 108, 141C, 177; Sociology 170, 171 (or any course from component course requirement above not used to satisfy that requirement).

Up to eight units of Law and Society 192, which is offered only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Bachelor of Arts — Law and Society (Criminal Justice Emphasis)

Preparation for the major. Core course requirements: same as basic major. Cognate requirements: Economics 1 and 2 or 109; Psychology 1 or 101; Sociology 3.

Upper-division major. Sixty upper-division units, distributed as follows. Core course requirements: same as basic major. Component course requirements: Philosophy 193; Political Science 167; Sociology 172, 175. Additional emphasis requirements: (1) one course from Psychology 103, Sociology 170, 171; (2) three courses from Philosophy 191, 192, Political Science 117, 166, 168; Religious Studies 177; Law and Society 190; (3) four courses from Economics 160, Political Science 165, 181, Sociology 174, Chicano Studies 164, Law and Society 100, 192 (a maximum of four units).

Up to four units of Law and Society 192 may be taken passed/not passed for major credit; all other courses must be taken for letter grades.

Honors Program

The law and society honors program is open to seniors with a minimum grade-point average of 3.3. Students who successfully complete a series of honors classes and maintain the minimum required grade-point average will graduate with Distinction in the Major.

LAW AND SOCIETY COURSES

LOWER DIVISION

1. Introduction to Law and Society

(4) Binion

Recommended: Sociology 1 or 101, Political Science 5 or 10 or 12 or 100, Philosophy 3. *The course is a prerequisite for study in the major.*

An introduction to the interdisciplinary study of the law. Preparation for and introduction to the law and society major. Introduction to the issues, principles, and approaches involved in future studies in an interdisciplinary program.

UPPER DIVISION

100. American Law

(4) Anderson

Lawyers, judges, and courts. Civil and criminal procedure. Problem areas of the law

190. Honors Seminar in Law and Society

(4) Staff

Prerequisites: Sociology 173, Political Science 115, Philosophy 100A; minimum grade-point average of 3.2; senior status, Law and Society major.

Honors seminar on selected topics in law and society. A research paper will be required.

192. Field Research in Law and Society
(1-8) Binion

Prerequisites: upper-division standing, good academic standing, consent of instructor. May be repeated once for up to a maximum of eight units.

Field research for students who seek greater understanding of the legal system through participant observation as an intern in a law-related agency. Depending upon the project, students may be required to work up to 40 hours per week. Each student will submit a research paper related to their topic.

194. Group Studies in Law and Society
(1-4) Staff

Prerequisites: Law and Society 1, Political Science 115, Sociology 173, Philosophy 192; advanced standing in the major; consent of instructor.

Group studies on special topics of importance to law and society. The course is designed for advanced law and society majors. It will consist of a limited number of students and an instructor working on topics of common interest and societal importance.

199. Independent Studies in Law and Society
(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in law and society. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Admission by special consent only. For majors; no more than four units may count toward completion of the major requirements.

Liberal Studies

Liberal Studies, Office of the Provost, College of Letters and Science, Cheadle Hall 2119; Telephone (805) 961-2038.

The major in liberal studies was created to provide a means for students to achieve particular intellectual goals that cannot be met by any existing major. Students are urged to consult with a college adviser early in their academic careers for assistance in formulating their objectives within the major and in identifying the courses at UCSB which will best fulfill those goals.

Students wishing to enter the major must draw up a proposed program of study in three separate departments according to the requirements listed below. After approval by the chairs of the selected departments and review by the office of the provost, the proposal is submitted to the executive committee of the College of Letters and Science, which has sole authority for approving admission to the major. The executive committee evaluates proposals according to a combination of the following criteria: (1) rationale for the choice of major departments, as explained in a statement of purpose submitted by the student, (2) overall coherence and academic integrity of the proposed set of courses to be taken in each department, (3) overall grade-point average (usually 2.5 or better).

The program approved by the executive committee constitutes a contract and may be altered only by petition to the committee.

Applications for admission to the major are available in the college office, Cheadle Hall 2119. The entire process of admission — from first picking

up application papers to final approval by the committee — can take several months. Interested students are advised, therefore, to begin the process early, and in no case later than the end of their junior year. Applicants who have reached their senior year will be admitted only in exceptional circumstances.

The liberal studies major does not automatically exempt prospective teaching credential candidates from the National Teachers Examination (NTE). For such exemptions, students must complete the undergraduate diversified program, as described in the *Letters and Science Announcement*. Students interested in UCSB's credential requirements are urged to consult the Graduate School of Education in Phelps Hall 1180 as soon as possible.

Students who intend to pursue graduate or professional studies are urged to consult advisers in their proposed fields to determine the prerequisites for admission to the desired graduate programs. The specific areas of emphasis within liberal studies will not be noted on student transcripts.

Bachelor of Arts — Liberal Studies

Preparation for the major. A minimum number of lower-division courses as specified by each of the three selected departments must be completed. A list of the current requirements for each department may be obtained at the department office or the college office, Cheadle Hall 2119. Liberal studies majors are required to complete all college and university degree requirements, including the General Education program.

Upper-division major. A minimum of fifty-six upper-division units, selected from three departments in the College of Letters and Science, with at least 16 units in each department. Some departments allow only a restricted number of their upper-division courses to be applied to this major. Students should ask at the office of prospective departments, or the college office, for a current list of courses that will be accepted for the liberal studies major. Upper-division courses which are accepted in transfer from other four-year colleges and universities will be accepted for major credit in appropriate departments only if they conform to courses approved for the major in that department. Different foreign languages are considered to be in different departments. Courses in military science and physical activities are not acceptable for the major, nor are Economics 109, Geology 101, 116SS, Mathematics 100A-B, Political Science 100, Psychology 101, Sociology 101, or adjunct writing courses, although some of these courses may be acceptable as preparation for the major. No more than 12 units of performance courses (Dance 149, Dramatic Art 113S and 149, Music Activities, or equivalent transfer courses) in all departments combined will apply to the major, and no more than 4 units of such courses may be taken in any single department. Courses which are to be applied to the major may not be taken on a passed/not passed basis. Majors must achieve a grade-point average of at least 2.0 in all courses taken in each of the three selected departments to qualify for graduation in the liberal studies major.

Senior thesis or research project requirement. As a means of tying together the various strands of their study in a coherent and academically significant fashion, liberal studies majors are required to complete at least one 4-unit course in one of the three selected departments in which a senior thesis or research project will be completed. A list of suitable courses is available at department offices and the college office. A copy of the thesis or a description of the completed project must be submitted to the executive committee upon completion of the project. A one-page

prospectus of the project must be submitted to the committee no later than the first week of classes in the quarter in which the student has enrolled in this course, and the final thesis or report must be submitted no later than the last day of that quarter.

Linguistics

Linguistics Program, South Hall 5607; Telephone (805) 961-3776. Program Chair: Charles N. Li.

Faculty

Wallace L. Chafe, Ph.D., Yale University, Professor (*discourse, literacy, language processing*)

C. Douglas Johnson, Ph.D., UC Berkeley, Associate Professor (*phonology*)

Charles N. Li, Ph.D., UC Berkeley, Professor (*semantics, historical syntax*)

Marianne Mithun, Ph.D., Yale University, Professor (*morphology, syntax, historical linguistics*)

Arthur Schwartz, Ph.D., University of Wisconsin, Professor (*syntax*)

Janet L. Kayfetz, Ph.D., Florida State University, Lecturer (*English as a second language, applied linguistics*)

Sandra A. Thompson, Ph.D., Ohio State University, Professor (*syntax, discourse*)

The study of linguistics focuses principally on the syntactic, phonological, and semantic structure of natural languages and how this structure changes through time. The study of language, with respect to its acquisition and use, raises questions pertinent to such areas as cognitive science, cultural relativism, and social structures. The B.A. in linguistics provides a useful background, not only for advanced work in the field, but also for related graduate study in anthropology, sociology, speech, psychology, philosophy, education, and languages.

There is no formal graduate program in linguistics. It is possible, however, to work out a graduate program of interdisciplinary independent study that includes linguistics in conjunction with another discipline such as psychology, speech, or foreign languages.

After completing specific prerequisites, students with a bachelor's degree in linguistics are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education. A certificate in English as a Second Language may be earned in another institution with approximately one year of additional study, opening the possibility of teaching in a variety of domestic and international bilingual programs.

Each faculty member is available for advising students. Further descriptions of the linguistics curriculum and of major requirements are available in the program office. A list of courses offered is available each quarter, prior to registration.

English as a Second Language

The Linguistics Program administers an English as a Second Language (ESL) program as a service to undergraduate and graduate students for whom English is not the native language. The primary goal of the ESL program is the preparation of international students for participation in an American academic community. The ESL program does not lead to any degree or certificate, but the courses within it are open to qualified

students from any department. Placement decisions are determined on the basis of performance on the English Language Placement Examination (ELPE), required of all incoming international students. New undergraduate students may be required to enroll in ESL courses as determined by their performance on the Subject A Placement Examination. Contact the ESL program for course descriptions and further information.

Bachelor of Arts — Linguistics

The Linguistics Program offers two concentrations in the major: the theoretical concentration and the interdisciplinary concentration. The theoretical concentration is designed for students who are primarily interested in the scientific aspects of language study. The interdisciplinary concentration is designed for students who are primarily interested in the social and humanistic aspects of language study. These concentrations are voluntary and will not be formally acknowledged on the student's official transcripts or diploma.

Theoretical Concentration

Preparation for the major. Linguistics 20.

Upper-division major. Forty-eight upper-division units in linguistics, including 101, 110A-B-C, 111A-B, 113A, 120A-B, and 121A-B-C. Recommended courses include Philosophy 100C, 108, 150C, 183, 184, 185; Psychology 101, 127; Sociology 101, 136; Speech 122, 153; foreign language courses; all upper-division linguistics courses.

Interdisciplinary Concentration

Preparation for the major. Linguistics 20.

Upper-division major. Forty-eight upper-division units in linguistics, including 101, 110A-B, 111A-B, 113A, 120A. Students will choose one of three areas: socio-cultural linguistics, psycholinguistics, or applied linguistics. Linguistics 130, 131, and either 132 or 140A are required for the socio-cultural area. Linguistics 165, 166, and either 184 or 186 are required for the psycholinguistics area. Linguistics 160, 166, and either 168A, B, or C are required for the applied linguistics area. Eight units of additional upper-division linguistics electives are also required.

Honors Program in Linguistics

Theoretical concentration. Majors in the theoretical concentration with a minimum 3.5 grade-point average in linguistics courses are eligible to join the honors program during their senior year. The honors program consists of an independent research project carried out as an extension of Linguistics 121A-B-C, Field Methods, under the supervision of a faculty member. The aim of the project is to write an original, publishable description of an aspect of a language, earning six units of Linguistics 199. Students successfully completing the program will be eligible for graduation with Distinction in the Major. Applications to the program should be made to the chair of the Linguistics Program early in the fall quarter of the senior year.

Interdisciplinary concentration. Majors in the interdisciplinary concentration with a minimum 3.5 grade-point average in linguistics courses are eligible to join the honors program during their senior year. The honors program requires six units of Linguistics 199, in which students undertake an independent research project in either psycholinguistics, socio-linguistics, neuro-linguistics, anthropological linguistics, or applied linguistics under the supervision of a faculty member. Students successfully completing the program will be eligible for graduation with Distinction in the Major. Applications to the program

should be made to the chair of the Linguistics Program early in the fall quarter of the senior year.

LINGUISTICS COURSES

ENGLISH AS A SECOND LANGUAGE

1. ESL: English Skills Review

(4) Staff

Prerequisite: placement based on English Language Placement Examination scores, Subject A examination scores, or by consent of department. Workload credit only. Course may be taken a total of two times.

This is an elementary level course aimed at developing reception and production skills (listening and reading, speaking and writing). Instruction will also include an intensive review of English grammar and basic sentence construction. (F)

2. ESL: English Skills Practicum

(4) Staff

Prerequisite: placement based on English Language Placement Examination scores, Subject A examination scores, or by consent of department. Workload credit only. Course may be taken a total of two times.

Instruction will focus on writing skills such as paragraph development and rhetorical patterns, and oral production skills such as group discussions, individual oral presentations and seminars. Course content will be drawn from a variety of academic disciplines. (F,W)

3. ESL: Undergraduate Writing

(4) Staff

Prerequisites: placement based on English Language Placement Examination scores, Subject A examination scores, or by consent of department; undergraduate standing. Workload credit only. Course may be taken a total of two times

Intended for undergraduate students just prior to their enrolling in first-year composition courses. Instruction will include a general review of English grammatical structure and rhetorical patterns for expository writing. (F,W)

3G. ESL: Graduate Writing

(4) Staff

Prerequisites: placement based on English Language Placement Examination scores, or by consent of department; graduate standing. Workload credit only. Course may be taken a total of two times.

Designed for graduate students with a firm foundation in English grammar, sentence construction, and basic rhetorical principles and oral skills. Students will be expected to write polished papers in their major disciplines and give them as oral presentations in tutorials. (F,W,S)

4. ESL: Self-Paced

(1-3) Staff

Prerequisite: consent of instructor. Linguistics 4 carries workload credit only. Course may be taken a total of three times for a maximum of nine units total.

Designed to meet individual needs of ESL students either individually or in small groups. Open to foreign students at any level of proficiency. (W,S)

5. ESL: Intermediate Oral Practicum

(3) Staff

Prerequisites: placement based on English Language Placement Examination scores and graduate status. Linguistics 5 carries workload

credit only. May be repeated for credit to a maximum of six units.

Focuses on listening comprehension and oral production skills necessary for participation in an American university classroom: group discussions, conversational strategies, individual oral presentations and note taking during lectures.

6. ESL: Advanced Oral Practicum

(3) Staff

Prerequisite: Linguistics 5, 8 or consent of instructor. Linguistics 6 carries workload credit only. May be repeated for credit to a maximum of six units.

Advanced course designed to refine students' skills in classroom discussion and oral presentations. Course content will be drawn from a variety of academic disciplines.

7. ESL: Teaching Assistant Workshop / Practicum

(3) Kayfetz

Prerequisite: current teaching assistantship or consent of instructor. Linguistics 7 carries workload credit only. May be repeated for a credit to a maximum of six units.

This is an intercultural teacher-training course with an emphasis on pronunciation and the oral production skills necessary for successful communication in the American university classroom. Each student is videotaped twice. (F,W,S)

9. ESL: Pronunciation

(3) Staff

Linguistics 9 carries workload credit only. May be repeated for credit to a maximum of six units.

This course is intended for students who have problems in English pronunciation or who wish to improve their pronunciation. Instruction will include a general review of vowels, consonants, stress and intonation patterns.

10. ESL: Graduate Science Writing

(3) Staff

Prerequisites: Linguistics 3G or equivalent and graduate science major. Linguistics 10 carries workload credit only. May be repeated for credit to a maximum of six units.

This course introduces the principles of scientific writing. Includes review of approaches to abstracts, laboratory reports, and research papers.

LOWER DIVISION

20. Language and Linguistics

(4) Thompson, Li, Mithun

An introduction to the scientific study of language: the nature of language structure; the social and cultural function of language; the origin and the learning of language; language change and the reconstruction of languages at earlier stages. (F,W,S)

30. Esperanto as an Introduction to the Study of Foreign Language

(4) Staff

A general introduction into the problems of foreign language study for English speakers, using Esperanto as a guide. Esperanto will be regularly compared to other languages and its various borrowings from them (in vocabulary, grammar, etc.) analyzed.

60. Word Origins

(4) Johnson

An introduction to the origin and evolution of words: language families, sound correspondences, and cognates; word-formation and loanwords; changes in meaning and form; etymology; dialectal differences in lexicon; vocabulary as historical and comparative evidence. (S)

UPPER DIVISION

100. Languages and Their Speakers

(4) Staff

The course will explore the grammatical and cultural principles people have learned to become members of various language communities. The languages selected for discussion will be representative of the language families and geographical regions of the world.

101. Basic Elements of Linguistic Analysis

(4) Schwartz, Staff

Prerequisite: Linguistics 20 or equivalent.

An introduction to the analytic methodology in the study of phonology, morphology, syntax, and semantics. A typologically-oriented course designed to demonstrate how linguists analyze languages. (F,S)

110A. Morphology

(4) Chafe

Prerequisite: Linguistics 101 or consent of instructor.

How meaning is encoded in words in languages of the world. Morphological and morphophonemic processes, lexical categories, derivation and inflection, productivity, tense, aspect, and mode, case, concord, valence changes (passives, anti-passives, benefactives, causatives), morphological typologies. (F)

110B. Syntax

(4) Thompson

Prerequisites: Linguistics 101 and 110A.

Similarities and differences among languages in the grammatical devices they use to signal relations between nouns and verbs, negation, comparison, existence/location/possession, causation, interrogation, reflexivization, relativization, attribution (adjectives), and backgrounding. Data from a range of languages presented and analyzed. (W)

110C. Approaches to Syntactic Analysis

(4) Schwartz

Prerequisites: Linguistics 101 and 110A-B.

The emphasis of this course is the nature of explanation, with special reference to natural language syntax. It examines several current approaches (in particular, the formalistic) for their treatment of a number of well-known empirical puzzles. (S)

111A-B. Introduction to Phonology

(4-4) Johnson

Prerequisite: Linguistics 101 or consent of instructor.

Introduction to the description of the sound pattern of natural language. (F,W)

113. Introduction to Semantics

(4) Thompson

Prerequisite: Linguistics 101 or consent of instructor.

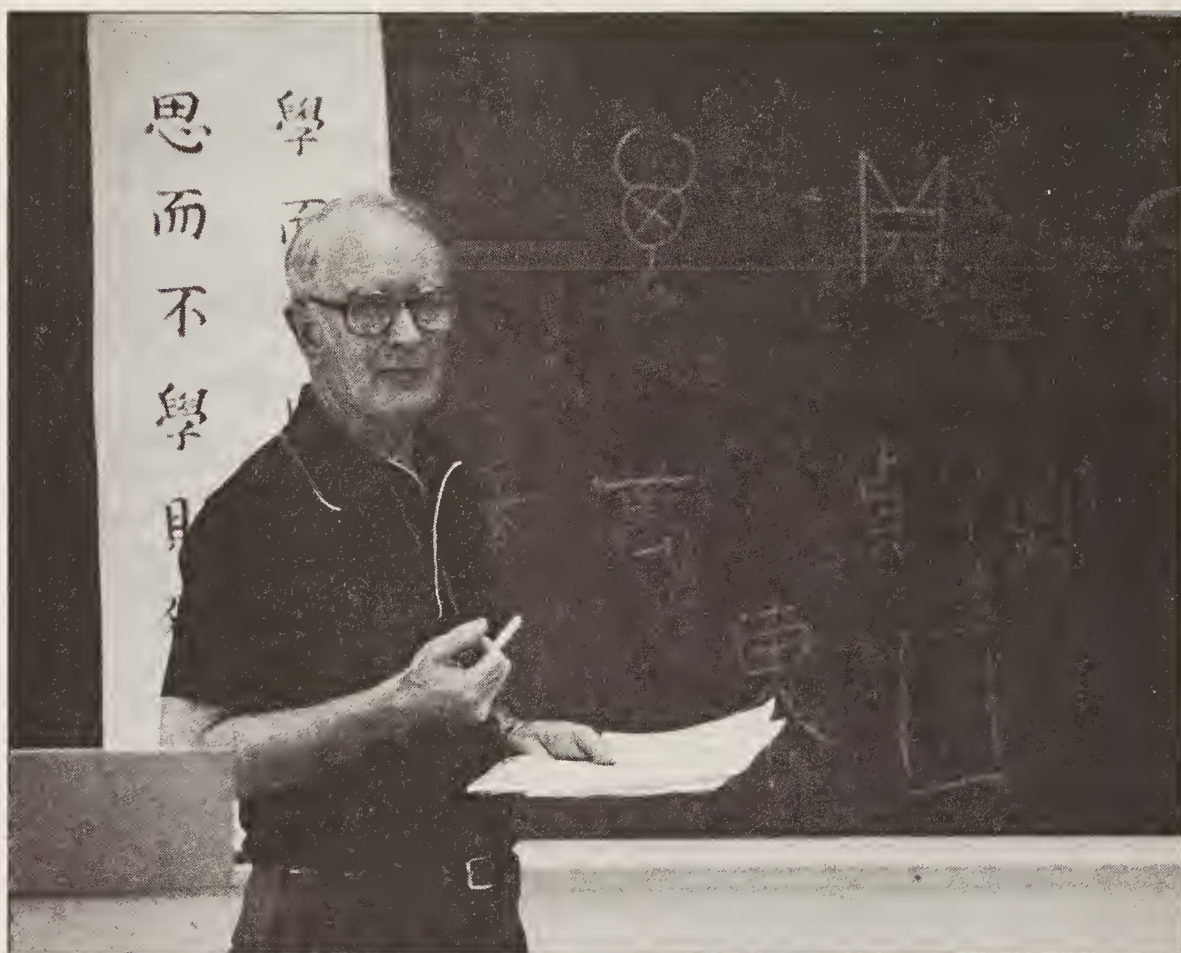
Introduction to semantic description of natural language. Consideration of semantic fields, the role of logic, and the underlying structure of language. Investigation of presupposition, entailment, synonymy, etc. (S)

114. Introduction to Historical Syntax

(4) Li

Prerequisite: Linguistics 20 or Linguistics 110A.

The course focuses on syntactic change: the nature, the processes, and the causation of syntactic changes. Empirical data will be drawn from a large variety of languages in order to arrive at significant generalizations in historical syntax.



Professor Chauncey Goodrich sketches examples of the earliest known written forms, logographs from the Shang Dynasty, circa 1500 B.C. On the scroll behind him is a quotation from Confucius written in calligraphy by master's candidate Jeffrey Johnson: "Learning without thought comes to nothing; thought without learning is dangerous."

115. Mathematical Models in Linguistics

(4) Johnson

Introduction to formal grammars and automata as applied to the analysis of the phonology and syntax of natural languages.

116. Anthropological Linguistics

(4) Li

Prerequisite: Linguistics 20 or upper-division standing. Same course as Anthropology 113.

This course introduces the structure of language, language universals, language typologies, language change, linguistic theories, and methodologies of linguistic research. It is designed for students of anthropology.

120A-B. Historical-Comparative Linguistics

(4-4) Johnson, Chafe

Prerequisite: Linguistics 111A.

An introduction to linguistic change, genetic classification of languages, and methods of reconstructing parent languages. (W,S)

121A-B-C. Field Methods

(4-4-4) Mithun

Prerequisites: Linguistics 110A and 111A-B or their equivalent. This is a three-quarter in-progress course with grades issued for the sequence upon completion of 121C. Letter grade required for the major. No final examination is required in this course. The sequence may be repeated once for credit.

Workshop format with native speaker of a non-Indo-European language as consultant. The students will analyze the phonological, syntactic, and semantic structure of the language by eliciting data from the consultant and applying the theoretical linguistic knowledge to the data. (F,W,S)

124. Discourse Analysis

(4) Staff

Prerequisite: Linguistics 101 or consent of instructor.

Basic concepts in the study of discourse, including differences between spoken and written language; conversational structure; structure of narrative and expository texts; information flow; and implications for the study of grammar. (S)

125. Introduction to Acoustic Phonetics

(4) Staff

Prerequisite: Linguistics 111A.

This course will cover the following topics: history of acoustic study of speech; acoustic theory of speech; means and goals of acoustic study; the use of acoustic features for speech description; cross-language comparison of acoustic cues.

130. Language and Culture

(4) Staff

An introduction to the study of language in its cultural setting; the effect of culture on the linguistic system, as well as the effect of the system on the culture; language in relation to cognitive categories, both universal and culture-specific; language in relation to social roles (e.g., male, female). (F)

131. Language and Society

(4) Staff

The interaction between language and social organization (social class, ethnic group, sex, occupation); language use in various situations (conversations, rituals, formal vs. informal occasions); problems of bilingualism, national vs. minority languages; effects of societal change on language. (W)

132. Sex Roles and Language

(4) Schwartz

The topics to be investigated are: the relation between cultural attitude and language, how gender socialization is reflected in the structure and use of language, and how political and social force are effective in "legislated" linguistic change. Different languages and cultures will be discussed. (W)

133. Studies in Sexism and Language

(4) Schwartz

Prerequisite: Linguistics 132.

Designed as follow-up to Linguistics 132, this course will be a workshop/discussion with outside readings and research required of the students. The course's inquiry will focus on whether sexism is an inherent consequence of sex roles and whether sex roles are a necessary consequence of the weak sexual dimorphism in humans. Some research projects will investigate aspects of contemporary American culture, and some will look at other cultures, with possible cross-cultural implications. (S)

134. North American Indian Languages

(4) Staff

Prerequisite: Linguistics 20 or equivalent introductory linguistics course.

Survey of the several hundred native languages of North America, including the history of research on these languages, their classification, their phonological, morphological, syntactic, discourse, and semantic properties, their social and cultural relevance, and their oral traditions. (F)

135. California Indian Languages

(4) Staff

Prerequisite: Linguistics 20 or consent of instructor.

Survey of native languages of California: linguistic relationships within California and connections to non-California languages; language and culture areas; linguistic aspects of culture; grammatical characteristics of several languages.

136. Introduction to African Languages and Cultures

(4) Staff

General introduction to the languages of sub-Saharan Africa concentrating on their cultural context. Topics to be discussed: language distribution; language classification and their implications; early population movement: linguistic and archeological evidence; language and literature; African writing systems; language planning.

137. Structure of Bantu Languages

(4) Staff

Prerequisite: Linguistics 136.

Investigation of relationships among the Bantu languages. Survey of phonological and grammatical structures of selected languages. The role of linguistic evidence for the reconstruction of Bantu history.

138. Linguistics and Prehistory

(4) Staff

Methods based on data from language distributions, linguistic reconstructions, genetic groupings, and loan-words are used by linguists to reconstruct population movements, homelands, and proto-cultures. The value of these methods will be discussed, with special reference to African and American Indian languages.

140A. Introduction to Sign Languages of the World

(4) Staff

General introduction to the sign languages of the world. Focus is on social situations surrounding the natural development and use of sign languages in various types of communities. Also included is a basic introduction to the linguistic characteristics of sign languages. (S)

140B. Sign Languages of the World: Linguistic Structure

(4) Staff

Prerequisite: Linguistics 140A or consent of instructor.

The course concentrates on comparison of the formational, morphological, syntactic, and semantic structures of sign languages. Special emphasis is given to the affects of channel of expression on the universal and unique characteristics of human languages.

142. History of Linguistic Theory

(4) Staff

Prerequisite: Linguistics 20.

Emphasis will be on the development of nineteenth-century European linguistics: the Neogrammarians, Saussure, the Prague School, Functionalism, and the development of twentieth-century American linguistics: anthropological linguistics, Bloomfieldians, generative-transformational schools, and postgenerative approaches.

150. Survey of Applied Linguistics

(4) Staff

Prerequisite: Linguistics 20 or consent of instructor.

An introduction to the work of applied linguistics and the various subdivisions within the field: language learning and teaching, language development, bilingual education, cross-cultural communication, testing, language planning for developing countries, and translation theory.

155. Applied Rhetoric: Acquiring and Teaching Writing Skills

(4) Staff

Prerequisite: Linguistics 20 or consent of instructor.

This course introduces the theoretical background, analyzes pedagogical approaches, and reviews materials for teaching writing, particularly to nonnative speakers of English. Students will also have the opportunity to practice teaching and to practice writing.

157. Teaching Reading to Second Language Learners

(4) Staff

Prerequisite: Linguistics 20 or consent of instructor.

An introduction to reading theory within a psycholinguistic perspective, analyzing various components of the reading process, and reviewing methodologies and materials used to teach reading to nonnative speakers.

159. Tutoring Practicum (Oral Skills: ESL)

(2) Staff

Prerequisite: Linguistics 20 or consent of instructor.

Undergraduates will tutor a foreign student in ESL oral skills two hours weekly, will liaise with instructors to monitor student progress, and will meet weekly in a discussion section for an introduction to error analysis and contrastive analysis.

160. The Structure of English

(4) Staff

Prerequisite: Linguistics 20 or 101 or consent of instructor.

Introduction to the phonological, morphological, syntactic and discourse features of contemporary English. Some elementary linguistic ideas are introduced and discussed in relation to the problems of teaching oral and written English.

165. First Language Acquisition

(4) Schwartz

Prerequisite: Linguistics 20 or equivalent or consent of instructor.

An introduction to theories of child language acquisition and development. Topics include the

relationship between language development and motor development, language and cognition, language input, and pragmatic competence. (W)

166. Second Language Acquisition

(4) Kayfetz

Prerequisite: Linguistics 20 or consent of instructor.

This course explores theories of second language acquisition and relates these theories to current language teaching methodologies. Language learning and teaching research will be reviewed and evaluated with particular attention given to applications in the language classroom. (F)

168A. Issues in Applied Linguistics: Curriculum and Materials Development in Second Language Teaching

(4) Staff

Prerequisite: Linguistics 166 or consent of instructor.

This course focuses on contemporary curricular designs as they pertain to teaching second languages. Topics include needs analysis, syllabus design theory, ESP (English for Special Purposes), and analysis of instructional materials.

168B. Issues in Applied Linguistics: Communicative Competence and Discourse Analysis

(4) Staff

Prerequisites: Linguistics 166 or consent of instructor.

An introduction to the relationship between form and function in language and techniques used to describe it. Topics include the structure of written and spoken texts, contextual variables, cross-cultural communication variables, and discourse analysis techniques.

168C. Issues in Applied Linguistics: Contrastive Analysis and Error Analysis

(4) Staff

Prerequisite: Linguistics 166 or consent of instructor.

This course is designed primarily for the prospective language teacher and provides an overview of methods linguists use in comparing languages and of how the systematic study of error provides insight into language learning strategies.

175. Introduction to Romance Linguistics

(4) Staff

May be repeated once for credit.

The course aims to illustrate principles of comparative-historical linguistic analysis by examining Romance languages (French, Portuguese, etc.) for similarities and differences, and tracing their evolution from Vulgar Latin. Aspects of phonology, morphology, and syntax are approached nontechnically.

184. Evolution of Language

(4) Staff

This course traces the evolution of the anatomical, neurological, and cognitive prerequisites for language in *homo sapiens*.

185. Animal Communication

(4) Li

This course will survey a selected number of animal communication systems ranging from those of simple organisms to mammals, especially primates. Each system will be analyzed in terms of such features as its capacity for symbolization and problemsolving, and will be examined vis-à-vis human language. (F)

186. Language and the Brain

(4) Staff

What is the ontogenetic development of human language and the brain? How and why does

human language differ from primate communication systems? Topics to be covered include various aspects of neurolinguistics such as lateralization, dichotic listening experiments, electroencephalography, and aphasia. (W)

190A. Language Universals: Phonology
(4) Staff

Prerequisite: Linguistics 111A.
This course will deal with phonological universals. Universals will be looked at both from a synchronic (phonological systems) and diachronic (phonological processes) point of view. The naturalness of these universals will be considered both in articulatory and perceptual terms.

190B. Language Universals: Syntax and Semantics
(4) Li, Schwartz

Prerequisite: Linguistics 110A.
The course concerns itself with syntactic and semantic generalizations across languages—from word order typology to color terms to the logical structure of requests. Part of the course deals with diachronic universals, with reference to notions of “drift” and markedness theory. The course complements Linguistics 190A which is devoted to phonological universals.

194. Group Studies in Linguistics
(2-3) Staff

Prerequisite: consent of the department chair.
This course may be repeated with the consent of the department.
A course limited to small groups whose interest and needs will determine the central focus. The meetings—normally two-three hours each and averaging at least once a week over the quarter—are not required to be periodic. A research paper is to be submitted by each student at the end of the quarter.

199. Independent Studies in Linguistics
(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in linguistics, and 4) have consent of instructor. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Admission by special arrangement.
Intended for the study of special areas within linguistics. (F,W,S)

GRADUATE COURSES

Graduate courses are offered only on student demand and/or faculty availability.

203. Studies in Classical Languages
(4) Staff

Prerequisite: admission by special arrangement.
The course examines aspects of the grammatical system of a classical language (e.g., Latin, Greek, Tibetan, Chinese, Arabic, Hebrew).

205. The Description of Language
(3) Li

Prerequisite: Linguistics 110 (may be taken concurrently).
Concerns of method: induction, intuition; grammatical relatedness; linguistic primes; levels of analysis and their empirical motivation; the structure of grammar.

209. Syntactic Theory
(4) Schwartz

Prerequisite: Linguistics 110A, 110B, or consent of instructor.
Consideration of special topics in the theory of syntax; alternative formalisms; current controversial aspects.

210. Phonological Theory
(4) Johnson

Prerequisite: Linguistics 111A or 111B or consent of instructor.
Aspects of lexical representation; theories of rule application; distinctive feature analysis and its problems.

211. Formal Models of Language
(3) Johnson, Li

Prerequisites: Linguistics 115 and 205 or 210.
The study of models of language structure and use. The focus is principally on the relation of automata to the notion “grammar,” but some attention may be given to statistical models of production, perception, and change.

215. Language Change
(3) Li, Schwartz

Prerequisite: Linguistics 205.
Language acquisition in the child; rule ordering and re-ordering; conditions for generalization; types of innovation; constraints on restructuring; lexicon vs. rule; mechanisms of “drift.”

225. Semantics
(4) Li

Recommended: Linguistics 205 or 210.
Its place in grammar: relation to syntax; the question of formalism and representation; relation to pragmatics and culture.

230. History of Linguistic Theory
(4) Schwartz

Prerequisite: consent of instructor.
Emphasis will be on the development of nineteenth-century European linguistics: the Neogrammarians, Saussure, the Prague School, Functionalism, and the development of twentieth-century American linguistics: anthropological linguistics, Bloomfieldians, generative-transformational schools, and postgenerative approaches.

238. Linguistics and Prehistory
(4) Staff

Methods based on data from language distributions, linguistic reconstructions, genetic groupings, and loan-words are used by linguists to reconstruct population movements, homelands, and proto-cultures. The value of these methods will be discussed with special reference to African and American Indian languages.

240. Anthropological Linguistics
(4) Li

The course will (i) survey the modern history of theoretical linguistics: structuralism, generative, and postgenerative theories of language; (ii) present the fundamental concepts in methodologies of synchronic and diachronic linguistics; (iii) introduce fieldwork methodologies.

260. Structure of English
(4) Staff

The study of syntactic and semantic patterns in English. Analysis of such patterns will be presented in the framework of language universals. The problems of teaching oral and written English will be a major consideration of the course.

265. Language Acquisition and Language Change
(4) Schwartz

Prerequisite: at least one course in basic linguistics.
The course deals with those aspects of linguistic change that relate to language acquisition—i.e., primarily internal mechanisms of change. Data from the language of children are examined. Questions of motivation and spread are addressed, particularly the issue of gradualism. (W)

284. Biological Foundations of Language
(4) Staff

This course traces the evolution of the anatomical, neurological, and cognitive prerequisites for language in *homo sapiens*.

286. Language and the Brain
(4) Staff

What is the ontogenetic development of human language and the brain? How and why does human language differ from primate communication systems? Topics to be covered include various aspects of neurolinguistics such as lateralization, dichotic listening experiments, electroencephalography, and aphasia. (W)

297. Graduate Studies
(1-4) Staff

Prerequisite: admission by special arrangement
Graduate credit given for an upper-division course with additional work at the graduate level.

500. Apprentice Teaching in Linguistics
(4) Staff

Prerequisite: teaching assistantship in linguistics. No unit credit allowed toward advanced degree.
A teaching practicum involving the study and development of effective teaching techniques in linguistics. Each student will be responsible for and teach a class section in linguistics.

501. Teaching Assistant Training
(2) Staff

Prerequisite: teaching assistantship in linguistics (first year only). No unit credit allowed toward advanced degree.
Instructional training. Orientation in professional conduct and responsibilities; observation of student’s teaching (in the form of faculty visits or videotaping) and follow-up conferences; discussion of teaching evaluations and workshops on pedagogical problems.

594AA-ZZ. Special Topics
(1-4) Staff

Prerequisite: admission by special arrangement.
594PH: Phonology
594SX: Syntax
594SM: Semantics

595AA-ZZ. Group Studies
(4) Staff

Prerequisite: admission by special arrangement.
595PH: Phonology
595SX: Syntax
595SM: Semantics

596AA-ZZ. Directed Reading and Research
(2-4) Staff

Individual tutorial.
596PH: Phonology
596SX: Syntax
596SM: Semantics

RELATED COURSES IN OTHER DEPARTMENTS

COMPUTER SCIENCE

- 160. Translation of Programming Languages
- 162. Programming Languages
- 185. Automata and Formal Languages

ENGLISH

- 111. The History of the English Language

FRENCH

- 103A-B. Phonetics
- 105A. French Morphology
- 105B. French Syntax
- 105C. Problems in French Linguistics
- 204B. Old French Philology
- 207A-B-C. Phonetics
- 209A-B. Linguistics

GERMAN

- 120. History of the German Language
- 220. History of the German Language

PHILOSOPHY

- 100C. Philosophy of Language
- 150C. Advanced Topics in Philosophy of Language

PSYCHOLOGY

- 127. Psychology of Language

RUSSIAN

- 108. The Russian Language: Morphology

SEMITIC

- 120A-B-C. Historical Semitic Linguistics

SOCIOLOGY

- 136. The Analysis of Conversational Interaction

SPANISH

- 100. Introduction to Hispanic Linguistics
- 101. American Spanish
- 107. Languages in Contact
- 114A-B-C. The Spanish Language: A Linguistic Approach
- 121A-B. History of Spanish and Portuguese Languages

- 200. Synchronic Linguistics
- 202. Diachronic Linguistics
- 207. Description and Measurement of Spanish-English Bilingualism
- 209. Dialectology
- 202B. Bibliography and Methods of Research: Hispanic Linguistics

SPEECH

- 117. Language and Human Behavior
- 150. Phonetics
- 153. Acquisition of the Communicative System
- 154. Assessment and Remediation of Communication

Mathematics

Department of Mathematics, South Hall 6607;
Telephone (805) 961-2171. Department Chair:
Alex Rosenberg

Faculty

- Charles A. Akemann, Ph.D., UC Berkeley, Professor (*functional analysis*)
- Girish Aras, Ph.D., Michigan State University, Assistant Professor (*sequential methods, survival analysis*)
- Seymour Bachmuth, Ph.D., New York University, Professor (*group theory*)
- Bjorn Birnir, Ph.D., The Courant Institute, Assistant Professor (*nonlinear partial differential equations*)
- Thomas K. Boehme, Ph.D., California Institute of Technology, Professor (*functional analysis, operational calculus*)
- Ronald Book, Ph.D., Harvard University, Professor (*theoretical computer science, applied discrete mathematics*)
- Andrew M. Bruckner, Ph.D., UC Los Angeles, Professor (*real analysis*)
- Michael J. Cambern, Ph.D., UC Berkeley, Professor (*functional analysis*)
- Jack G. Ceder, Ph.D., University of Washington, Professor (*real analysis*)
- John E. Doner, Ph.D., UC Berkeley, Associate Professor (*logic, computer science*)
- John A. Ernest, Ph.D., University of Illinois, Professor (*functional analysis and Von Neumann algebras*)
- Ky Fan, D.Sc., University of Paris, Professor Emeritus
- Joseph Gani, D.Sc., London University, Professor (*statistics, applied probability, biostatistics*)
- Larry Gerstein, Ph.D., University of Notre Dame, Professor (*quadratic forms, number theory*)
- Sreenivasa R. Jammalamadaka, Ph.D., Indian Statistical Institute, Professor (*statistics*)
- Eugene C. Johnsen, Ph.D., Ohio State University, Professor (*combinatorial mathematics, matrix theory*)
- Paul Kelly, Ph.D., University of Wisconsin, Professor Emeritus
- Roy Leipnik, Ph.D., UC Berkeley, Professor (*applied mathematics*)
- Darren Long, Ph.D., Cambridge University, Assistant Professor (*low-dimensional topology*)

- Marvin Marcus, Ph.D., UC Berkeley, Professor (*linear and multilinear algebra, combinatorial mathematics*)
- Kenneth C. Millett, Ph.D., University of Wisconsin, Professor (*algebraic and geometric topology*)
- Henryk Minc, Ph.D., University of Edinburgh, Professor (*linear algebra, matrix theory, combinatorial analysis*)
- Horace Y. Mochizuki, Ph.D., University of Washington, Professor (*group theory*)
- John Douglas Moore, Ph.D., UC Berkeley, Professor (*differential geometry*)
- Morris Newman, Ph.D., University of Pennsylvania, Professor (*linear algebra, number theory*)
- James B. Robertson, Ph.D., Indiana University, Professor (*probability, ergodic theory*)
- Alex Rosenberg, Ph.D., University of Chicago, Professor (*quadratic forms, Witt rings, formally real fields*)
- Melvin Rosenfeld, Ph.D., UC Los Angeles, Associate Professor (*functional analysis*)
- Martin Scharlemann, Ph.D., UC Berkeley, Professor (*topology*)
- Thomas Sideris, Ph.D., Indiana University, Assistant Professor (*partial differential equations, nonlinear wave equations*)
- Stephen Simons, Ph.D., Cambridge University, Professor (*functional analysis*)
- James M. Sloss, Ph.D., UC Berkeley, Professor (*partial differential equations*)
- Milton Sobel, Ph.D., Columbia University, Professor (*statistics*)
- David A. Sprecher, Ph.D., University of Maryland, Professor (*real analysis, superpositions of functions*)
- Robert C. Thompson, Ph.D., California Institute of Technology, Professor (*linear algebra, number theory*)
- Lew Walton, Ph.D., UC Berkeley, Professor Emeritus
- Max L. Weiss, Ph.D., University of Washington, Professor (*complex analysis, function algebras*)
- Julian Weissglass, Ph.D., University of Wisconsin, Associate Professor (*semigroups, mathematics education*)
- Lyn Whitaker, Ph.D., UC Davis, Assistant Professor (*statistics*)
- Raymond Y. Wong, Ph.D., Louisiana State University, Professor (*topology*)
- Adil Yaqub, Ph.D., UC Berkeley, Professor (*ring theory and universal algebras*)
- Julius Zelmanowitz, Ph.D., University of Wisconsin, Professor (*rings, modules*)
- Birge Zimmermann-Huisgen, Ph.D., University of Munich, Professor (*rings, modules, and Abelian group theory*)

The Department of Mathematics offers undergraduate programs leading to the degrees of B.S. in mathematics, B.S. in mathematical sciences, B.A. in mathematics, B.A. in mathematical sciences, and, in conjunction with the Department of Economics, B.A. in economics/mathematics. The department offers graduate programs leading to the M.A. and Ph.D. degrees. In addition, it offers a wide variety of service courses needed as a foundation for study in the sciences, in engineering, and in other fields.

An undergraduate adviser and peer advisers are available in the department office to answer questions about the department and other academic matters. Detailed information about the majors and about career options in mathematics is available in several publications, including *Professional Opportunities in the Mathematical Sciences*. The *Weekly Calendar* is designed to keep students and faculty informed about current seminars, colloquia, and special events.

Various prizes and awards are offered each year to outstanding majors in mathematics. These include the Raymond L. Wilder award and student

memberships in the Mathematical Association of America. Each award is given on the basis of academic excellence in the mathematics program.

After completing specific prerequisites, students with a bachelor's degree in mathematics are eligible to pursue a California teaching credential. Interested students should discuss their plans immediately with the credential adviser in the Graduate School of Education.

Diagnostic and placement examinations. In order to enroll in a precalculus or first quarter calculus course at UCSB, students must take the Algebra Diagnostic Test which is offered during pre-instructional week each quarter and is valid for the quarter in which it is taken. Students with prior work in calculus, but no unit credit at UCSB, can verify proper placement into the UCSB calculus sequence by passing the Calculus Placement Examination. Times and places for both these examinations are announced each quarter in the *Schedule of Classes*.

Results on the Algebra Diagnostic Test are substantially improved by reviewing algebra and trigonometry prior to taking the exam. A copy of *Precalculus Review Topics* can be obtained from the UCSB Bookstore, University of California, Santa Barbara, CA 93106 for \$8.00.

Self-paced courses. Self-paced versions of several math courses are available. They are indicated by an "S" following the course number designation and are equivalent to the regular version of the courses. Students who do not complete at least 1 unit of credit by the drop deadline of each quarter will be removed from the course.

UNDERGRADUATE PROGRAM

Mathematics is basic to the sciences but its methods are somewhat different. It involves developing techniques for making logical deductions from given hypotheses. These hypotheses are usually of such a general form that they are applicable to many areas of investigation.

As preparation for entering any of the undergraduate programs, students should have completed two years of algebra and courses in plane geometry and trigonometry in high school. Students lacking this background should take Math 1 or 15 (depending on subject deficiency). In the first two years at UCSB, all students who major in mathematics should complete the pre-major requirements listed below: Mathematics 7A-B-C or 3A-B-C; 8; 11A-B-C, or 5A-B-C, or 11A; 30A-B; and Computer Science 10 and 11FO. By the end of the second year, students should decide which of the undergraduate degrees described below is best suited to their needs and should design an upper-division program in consultation with a faculty adviser. Sample recommended programs for each emphasis are available from the undergraduate adviser.

Bachelor of Science — Mathematics

This degree is especially suitable for students who want a rigorous program with an emphasis on theory, as well as for those who plan to go on to graduate work in mathematics.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 and 11FO are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of pre-major requirements, students may petition to be accepted into full major status. Mathematics 7A-B-C or 3A-B-C or appropriate portions of 3S; 11A-B-C or 5A-B-C or appropriate portions of

5S; Computer Science 10 and 11FO; and Mathematics 8.

Upper-division major. Fifty-two upper-division units in mathematics and probability and statistics are required, excluding 100A-B, 192, 193, and P/STAT 133A-B-C. These 52 units must include at least 32 units chosen from Mathematics 108A-B, 122A-B, 111A-B-C, and 118A-B-C, 145, 146, and 147, including at least one three-quarter sequence from 111A-B-C or 118A-B-C. With an adviser's approval, four of the 52 units may be non-mathematics courses taken as part of a coherent mathematics program.

Bachelor of Science — Mathematical Sciences

This is an applied mathematics degree which is divided into three concentrations: physical sciences, operations research, and statistics. Completion of one of the concentrations will not be formally acknowledged on the student's official transcripts or diploma.

Pre-major requirements (all concentrations). Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 and 11FO are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of pre-major requirements, students may petition to be accepted into full major status. Mathematics 7A-B-C or 3A-B-C or appropriate portions of 3S; 11A-B-C or 5A-B-C; Computer Science 10 and 11FO; and Mathematics 8.

*For the physical science and operations research concentration, Mathematics 11B must be taken.

Upper-division major. Required for all concentrations: 52 upper-division units in mathematics and probability and statistics, excluding Mathematics 100A-B, 192, 193, and P/STAT 133A-B-C. The 52 units must include the following specific requirements for one of the concentrations:

- A. Physical science concentration requirements. Mathematics 104A-B-C and 124A-B, and 122A-B. Up to four of the 52 required units may be in courses from related departments, approved by the major adviser as part of a coherent program.
- B. Operations research concentration requirements. Mathematics 104A-B, 132A-B, either 136A-B-C or 136A-137A-B, and P/STAT 120A-B-C or 120A-160A-B. Up to four of the 52 required units may be in courses from related departments, as in A above.
- C. Statistics concentration requirements. P/STAT 120A-B-C, and four courses selected from P/STAT 122, 123, 126, 130, 160A, 160B. Up to four of the 52 units may be in courses from related departments. All programs must be approved by the major adviser.

Bachelor of Arts — Mathematics

This degree aims to provide the student with a broad, liberal education in pure mathematics and is flexible enough to allow a wide variety of upper-division programs which can be created by the student in consultation with a faculty adviser. The B.A. in mathematics contains a special concentration designed specifically as preparation for high school teaching. Completion of a concentration will not be formally acknowledged on the student's official transcripts or diploma.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 and 11FO are excluded as part of the pre-

major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of pre-major requirements, students may petition to be accepted into full major status. Mathematics 7A-B-C or 3A-B-C or appropriate portions of 3S; 11A-B-C or 5A-B-C or appropriate portions of 5S or 11A-30A-B; Computer Science 10 and 11FO; Mathematics 8.

Upper-division major. Forty upper-division units in mathematics and probability and statistics are required, excluding Mathematics 100A-B, 192, 193, and P/STAT 133A-B-C. The forty units must include courses appropriate for one of the two concentrations offered.

- A. Liberal arts concentration requirements. At least three two-quarter sequences, including one algebra sequence (108A-B, 111A-B, or 136A-B) and one analysis sequence (122A-B, 118A-B, or 160A-B). With an adviser's approval, 4 units of the 40 units may be non-mathematics courses taken as part of a coherent mathematics program.
- B. High school teaching concentration requirements. At least three two-quarter sequences, including 101A-B or 118A-B; and 102A-B or 102A and 113. With an adviser's approval, 4 units of the 40 units may be non-mathematics courses taken as part of a coherent mathematics program.

Bachelor of Arts — Mathematical Sciences

This is an applied mathematics degree intended for students interested in computational aspects of mathematics, systems analysis, and the decision sciences. It is suitable as a terminal baccalaureate degree or as preparation for advanced training in applied mathematics, management science, business administration, or operations research.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 and 11FO are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of pre-major requirements, students may petition to be accepted into full major status. Mathematics 7A-B-C or 3A-B-C or appropriate portions of 3S; Computer Science 10 and 11FO; Mathematics 8; 11A-30A-B or 11A-B-C or 5A-B-C.

Upper-division major. Forty upper-division units in mathematics and probability and statistics are required, excluding Math 100A-B, 192, 193, and P/STAT 133A-B-C. The forty units must include the following courses: Mathematics 104A-B-C; P/STAT 120A-B or 121A-B; and either Mathematics 132A-B or 144A-B. With an adviser's approval, 4 units of the 40 units may be non-mathematics courses taken as part of a coherent mathematics program.

Bachelor of Arts — Economics/ Mathematics

This program is offered jointly with the Department of Economics. It provides a theoretical foundation for advanced study in business administration, law, or management science.

Pre-major requirements. Students must complete all pre-major courses with a 2.5 or higher grade-point average. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of

pre-major requirements, students may petition to be accepted into full major status. Economics 1 and 2 (or 109); Mathematics 7A-B-C or 3A-B and 3C or 3CE; 5A-B-C or 11A-B-C; and 8. Upper-division students transferring from another major or institution may substitute Economics 109 for Economics 1 and 2.

Upper-division major. Forty upper-division units in economics and mathematics are required, excluding Economics 109, 110, and 193; Mathematics 100A-B, 192, 193, and P/STAT 133A-B-C. The 40 units must include at least 16 units in each department, including Economics 104A-B and 105; Mathematics 108A-B; and either Economics 141A-B-C or P/STAT 120A-B-C. A maximum of 12 units of Economics 199 and/or Mathematics 199 will apply toward the major. For breadth, further elective courses concerning optimization, such as Mathematics 131 and 132A-B-C, are recommended. Students should consult closely with their advisers in the Departments of Economics and Mathematics about their upper-division programs, particularly if they intend to pursue graduate study in a closely related area such as mathematical economics, applied mathematics, statistics, or operations research.

Honors Program in Mathematics

To enter the honors program in mathematics, the student must have completed 120 units of course work with an overall grade-point average of at least 3.5 and 16 upper-division mathematics and probability and statistics units with a grade-point average of at least 3.7. To complete the honors program, the student must maintain a grade-point average of at least 3.7 in all upper-division and graduate mathematics and probability and statistics courses and must complete one of the following: (a) both 111A-B-C and 118A-B-C; (b) a three-quarter graduate sequence. Students who complete the honors program are awarded Distinction in the Major at the time of graduation.

GRADUATE PROGRAM

Candidates for admission to graduate programs offered by the Department of Mathematics must take the Graduate Record Examination (GRE) and have their scores (Verbal, Quantitative, and Analytical) sent to the department. While the advanced GRE in mathematics is not required, candidates for financial aid are particularly encouraged to take this test as well. Candidates whose native language is not English or who did not receive a bachelor's or master's degree from a U.S. institution must take the Test of English as a Foreign Language (TOEFL). Foreign students must have a score of at least 575 on the TOEFL examination before they may be considered for a teaching assistantship.

In the following description of the M.A. and Ph.D. programs in mathematics, frequent mention will be made of "area requirements." Area requirements exist in the disciplines of algebra, analysis, applied mathematics, geometry/topology, and probability and statistics. With the exception of geometry/topology, the area requirements are fulfilled by satisfactorily completing an examination and a one-year graduate course within the discipline. S/U grading is not allowed in the courses satisfying the area requirements. Complete descriptions of various area requirements and how they may be satisfied can be found in the publication *Graduate Study in Mathematics*, which is available from the department office.

Master of Arts — Mathematics

Admission

Candidates for admission must present a bachelor's degree with a major in mathematics, or the equivalent of such training. Entering students may be appraised by examination in addition to the evaluation of their records. Whenever necessary, supplementary course work will be required.

Degree Requirements

The department offers two plans for completing the degree: Plan 1 (thesis option) and Plan 2 (area requirement option).

Both plans require completion of 42 units with grades of at least B, 24 of which must be in graduate courses offered by the Department of Mathematics, excluding 270 and 271. The remaining 18 units may be selected from upper-division or graduate courses in mathematics, or in appropriate related fields with the approval of the Mathematics Graduate Committee. They can also include up to eight units of directed reading and thesis preparation.

In addition, Plan 1 requires demonstration of adequate knowledge in linear algebra, modern algebra, real analysis, and complex analysis, and preparation of an acceptable thesis and oral defense of the thesis before a faculty committee. The student and thesis supervisor must present to the graduate committee for its approval a coherent course-work and thesis program about one year before expected graduation. The 24 graduate units in mathematics must include at least one full-year course sequence that satisfies one of the six area requirements.

Plan 2. Students must satisfy the area requirements in the areas of algebra and analysis. A student who wishes to substitute a different area requirement for one of the above areas must petition the departmental graduate committee; such petitions will normally be approved if the student has had sufficient undergraduate course work, with good grades, in the exempted area.

Master of Arts — Applied Mathematics

Admission

The candidate must (1) fulfill the scholarship requirements for graduate study; (2) hold a bachelor's degree in mathematics or a closely related field; and (3) have had undergraduate course work in linear algebra, differential equations, advanced calculus, and in some area in which mathematics is applied. Evaluation of the candidate's past work will be made by the graduate committee, and supplemental undergraduate courses will be required when necessary.

Degree Requirements

The department offers two plans for completing the degree: Plan 1 (thesis option), and Plan 2 (area requirement option). All candidates must complete 42 units with grades of B or better, 24 units of which must be in graduate courses offered by the Department of Mathematics (excluding 270 and 271). These units must include at least one course from Math 204A-B-C, 205A-B-C, 206A-B-C, 243A-B-C, 245A-B-C, 246A-B-C, 247, 248.

The remaining 18 units may be in upper-division or graduate-level courses in mathematics or, with the approval of the Graduate Committee, outside of mathematics, with a limit of 9 units outside the department.

Plan 1. Students must demonstrate mastery of applied algebra and applied analysis. This requirement may be fulfilled by passing each of the five sequences, Math 108A-B, 136A-B, 104A-B-C, 124A-B-C, and 122A-B with average grades of at least B in each sequence. Equivalent course work taken outside UCSB will be evaluated by the graduate committee. No more than eight of the 24 graduate units may be in Math 596/598 combined; the remaining units will be in 200 series courses. Plan 1 students must prepare an acceptable thesis under the supervision of a faculty member and defend it before a faculty committee.

Plan 2. Students must satisfy two area requirements. One of these must be the area requirement in applied mathematics. The second area requirement shall be chosen by the student with the permission of his or her adviser. The student must also complete either Math 111A-B-C, Math 136A-B-C, or the equivalent, with a minimum grade of B in each quarter.

Doctor of Philosophy — Mathematics

The department offers the Ph.D. degree in mathematics. A science applications track and a track in probability and statistics, described below, are also available.

Admission

A candidate for admission to the Ph.D. program in mathematics must fulfill the scholarship requirements for graduate study presented in the *Graduate Division Announcement* and should have a strong undergraduate background in the mathematical sciences.

Degree Requirements

A student advances to candidacy for the degree by doing the following:

(a) Passing 72 units of 200-level graduate courses offered by the Department of Mathematics, excluding 270 and 271, with a grade of at least B or S in each course. These 72 units must include at least one further full-year graduate sequence, excluding Math 270 and 271, not being used to satisfy requirement (b).

(b) Satisfying three area requirements, normally algebra and analysis, plus a third area to be determined in consultation with the graduate adviser. S/U grading is not allowed in course work involving area requirements in (a) or (b).

(c) Exhibiting proficiency in two foreign languages, normally chosen from French, German, Russian, Chinese, and Japanese.

(d) Passing an oral examination on the proposed plan for the doctoral dissertation.

After advancing to candidacy, the student completes the requirements for the degree by submitting an acceptable thesis representing an original mathematical contribution, and defending this thesis before a faculty committee.

Experience as a teaching assistant is required for the Ph.D. Further information is available from the department.

Doctor of Philosophy — Mathematics (Science Applications Track)

Admission

A candidate for admission to this program must fulfill the scholarship requirements for graduate study presented in the *Graduate Division Announcement* and should have a strong

undergraduate background in the mathematical sciences. In addition, the candidate should have completed sufficient course work in a scientific field outside mathematics to permit graduate study in that field.

Degree Requirements

Requirements (b), (c), and (d) described above under the heading "Degree Requirements, Doctor of Philosophy — Mathematics" remain in force, as does the requirement concerning teaching experience and a thesis. Requirement (a) is changed as follows:

(a) Passing 48 units of graduate courses offered by the Department of Mathematics, excluding 270 and 271, with a grade of at least B or S in each course. In addition, passing with the grade of B or better the equivalent of two one-year sequences (six quarters of graduate-level courses, 24 units) chosen to form a coherent program of study in one or more fields outside of mathematics, as approved by the graduate committee. During the first year in graduate school, the student is expected to submit a proposed program of study to the graduate committee for its review and approval.

Doctor of Philosophy — Mathematics (Statistics track)

For detailed information, see the Statistics and Applied Probability Program.

MATHEMATICS COURSES

LOWER DIVISION

1. College Algebra

(4) Staff

Prerequisites: at least two years of high school algebra. Students who have received credit for Mathematics 1S, 1M, or 15 cannot enroll in Mathematics 1. Workload credit only.

An introductory course which serves as preparation for college mathematics courses. Numbers and sets, algebraic manipulation, inequalities, functions, and graphing, polynomials, and the quadratic formula. Systems of linear equations.

1S. Self-Paced College Algebra

(1-4) Staff

Not open for credit to students who have received credit for Mathematics 1, 1M, or 15 or to students who received a grade of C or better in mathematics courses whose prerequisites include algebra. Workload credit only; not for baccalaureate credit.

This course consists of sequential instructional modules which cover the subject matter of Mathematics 1. Credit is assigned in proportion to the work completed, but students who fail to complete coursework as designated by the instructor by the drop deadline of the quarter will be administratively dropped from the course. The final examination is tailored to the modules mastered by each student.

3A. Calculus with Applications, First Course

(4) Staff

Prerequisite: Algebra Diagnostic Test. Not open to students who have received credit for Mathematics 7A or equivalent portions of 3S. Reduced credit of two units will be given to students who have received credit for Mathematics 34A.

Differential calculus including analytic geometry, functions and limits, derivatives, techniques and

applications of differentiation, logarithmic and trigonometric functions.

3B. Calculus with Applications, Second Course

(4) Staff

Prerequisite: grade of C or better in Mathematics 3A, 7A, or appropriate portions of 3S. Not open to students who have received credit for Mathematics 7B or appropriate portions of 3S. Reduced credit of two units will be given to students who have received credit for Mathematics 34B.

Integral calculus including definite and indefinite integrals, techniques of integration, applications in mathematics and physics.

3C. Calculus with Applications, Third Course

(4) Staff

Prerequisite: grade of C or better in Mathematics 3B or 7B or appropriate portions of 3S. Not open to students who have received credit for Mathematics 3CE, 7C or appropriate portions of 3S.

Calculus of several variables including partial derivatives, multiple integrals, infinite series, applications in mathematics and physics.

3CE. Calculus with Applications for Economics Majors, Third Course

(4) Staff

Prerequisite: grade of C or better in Mathematics 3B or 7B or appropriate portions of 3S. Students may not receive credit for this course if they have received credit for Mathematics 3C, 7C or appropriate portions of 3S.

Calculus of several variables including partial derivatives, multiple integrals, infinite series, applications in mathematics and physics. This is a special lecture of Mathematics 3C designed especially, but not exclusively for economics students.

3S. Self-Paced Calculus with Applications

(1-12) Staff

Prerequisite: Algebra Diagnostic Test. Reduced credit for students who have taken corresponding portions of Mathematics 3A-B-C, 7A-B-C, 34A-B, 34S, or 3CE. May be repeated for credit up to a total of 12 units.

A self-paced course covering the same material as Mathematics 3A-B-C. Credit is assigned in proportion to the work completed, but students who fail to complete coursework as designated by the instructor by the drop deadline of the quarter will be administratively dropped from the course.

5A. Applied Differential Equations

(4) Staff

Prerequisites: grade of C or better in Mathematics 3C, 3CE, or 7C or appropriate portions of 3S. Not open to students who have received credit for Mathematics 11B.

Intended for majors in physical sciences and engineering. First and second order linear differential equations, series solutions, method of undetermined coefficients and variation of parameters, Laplace transforms.

5B. Advanced Calculus with Applications, First Course

(4) Staff

Prerequisites: Physics 1 or 6A or 7A, and grade of C or better in Mathematics 5A or equivalent. (Not open to students who have received credit for Mathematics 11A.

Vector analysis, matrices, systems of linear equations, eigenvalues, eigenvectors, systems of linear differential equations, vector calculus, partial derivatives, gradient, tangent plane,

Lagrange multipliers. Emphasizes applications in the physical sciences and engineering.

5C. Advanced Calculus with Applications, Second Course

(4) Staff

Prerequisites: Physics 1 or 6A or 7A, and a grade of C or better in Mathematics 5B or equivalent. Not open to students who have received credit for Mathematics 11C.

Multiple integrals including transformation of variables, surface integrals, the divergence theorem, Stokes' theorem, Laplace's equation, introduction to partial differential equations, Fourier series, orthogonal sets of functions, line integrals, and Green's theorem. Emphasizes applications in the physical sciences and engineering.

5S. Self-Paced Advanced Calculus with Applications

(1-12) Staff

Prerequisites: Physics 1 or 6A or 7A, and a grade of C or better in Mathematics 3C, or 7C or appropriate portions of 3S. Reduced credit for students who have completed equivalent parts of Mathematics 5A-B-C or 11A-B-C. May be repeated for credit up to a total of 12 units. Students who fail to complete coursework as designated by the instructor by the drop deadline of the quarter will be administratively dropped from the course. A self-paced course covering the same material as Mathematics 5A-B-C. Credit is assigned in proportion to the work completed. The final examination is tailored to modules completed by each student.

7A-B-C. Honors Calculus

(5-5-5) Staff

Prerequisites: a score at the required level on the algebra diagnostic examination for enrolling in Mathematics 7A. A grade of C or better in Mathematics 7A is prerequisite to 7B. A grade of C or better in Mathematics 7B is prerequisite to 7C. Not open to students who have received credit for corresponding portions of 3A-B-C, 3S, 34A-B, 34S, or 3CE.

Intended to provide more of a challenge for the more motivated student. Topics include: differential and integral calculus in one variable, infinite series, elements of multivariable calculus, and application

8. Introduction to Modern Algebra

(4) Staff

Prerequisite: Mathematics 3A or equivalent.

Topics include principles of induction, integers, integers modulo n , elementary number theory, division and Euclidean algorithms, prime factorization, complex numbers, polynomial rings and properties of polynomials, theory of equations, permutations. Intended to provide background for upper-division mathematics courses.

11A. Elementary Linear Algebra

(4) Staff

Prerequisite: grade of C or better in Mathematics 8. Not open to students who have received credit for Mathematics 5B.

The fields of real and complex numbers, vectors and vector spaces, linear transformations, matrices, systems of equations and matrix inversion, determinants, eigenvalues, and eigenvectors.

11B. Introduction to Differential Equations

(4) Staff

Prerequisites: Physics 1 or 6A or 7A, and grade of C or better in Mathematics 3C or 7C, and 11A. Not open to students who have received credit for Mathematics 5A.

Intended for students planning to major in mathematics or science who expect to use mathematics creatively. Exact differential equations, first and second order linear differential equations,

method of undetermined coefficients and variation of parameters, series solutions. Linear systems of differential equations. Nonlinear systems, the phase plane, stability.

11C. Multivariate Calculus

(4) Staff

Prerequisites: Physics 1 or 6A or 7A, and a grade of C or better in Mathematics 3C or 7C, and 11A. *Note:* Mathematics 11B is not a prerequisite. Not open to students who have received credit for Mathematics 5C.

Intended for students planning to use calculus creatively. Lagrange multipliers, surface area, change of variables in a multiple integral. Line and surface integrals, Green's theorem, Stokes' theorem, and the divergence theorem.

12A. Modern Introductory Mathematics of Finance

(4) Staff

Prerequisite: Mathematics 1 or equivalent.

Intended for students seeking a general background in mathematics of finance. Recommended for students interested in business, managerial science, actuarial science, economics, or general education. A pocket-sized calculator having and exponential and logarithm function is needed. Topics: simple and compound interest, annuities (both simple and general), loans with two interest notes, retirement plans, and life insurance.

12B. Modern Intermediate Mathematics of Finance

(4) Staff

Prerequisite: Mathematics 12A.

Additional topics in the mathematics of finance: perpetuities, depreciation, appreciation and leveraging, bonds, selected topics.

13. Mathematics Appreciation

(3) Staff

Prerequisite: two years of high school mathematics or equivalent.

A course intended to give general students a better understanding of the nature of mathematics, the character and origin of different subject fields in mathematics, and the sources of mathematical research.

14. Elementary Mathematics Using BASIC

(4) Staff

An introductory course in which the BASIC programming language is interwoven with the study of college algebra and elementary functions. BASIC commands, numbers and variables, evaluating and using trigonometric and exponential functions, program looping, roots of polynomials, subscripted variables and arrays, elementary vector-matrix manipulations, random number generators, and games of chance.

15. Precalculus

(4) Staff

Prerequisite: Algebra Diagnostic Test. Students who have received credit for Mathematics 1, 1M, or 1S may receive credit for Mathematics 15, but students who have received credit for any portion of Mathematics 15S or a course with a prerequisite including algebra or trigonometry may not receive credit for this course.

A function approach integrating algebra and trigonometry. Topics include: one-to-one and onto functions; inverse functions; properties and graphs of polynomial, rational, exponential, and logarithmic functions; properties and graphs of trigonometric and inverse trigonometric functions; trigonometric identities; trigonometric equations.

15S. Self-Paced Precalculus

(1-4) Staff

Prerequisite: Algebra Diagnostic Test. Students who have received credit for Mathematics 1 or 1S may receive credit for Mathematics 15S, but students who have received a grade of B or better in Mathematics 15, 2, 2M, or 2S or a course with a prerequisite including algebra or trigonometry may not receive credit for this course. May be repeated for credit to a maximum of four units.

This is a self-paced version of Mathematics 15. Credit is assigned in proportion to the work completed, but students who fail to complete coursework as designated by the instructor by the drop deadline of the quarter will be administratively dropped from the course.

30A. Applied Finite Mathematics

(4) Staff

Prerequisite: Mathematics 11A.

Mathematical induction, set theory, counting methods in combinatorial problems, probability, Bayes' theorem, Markov chains, applications to selected problems in the biological sciences, social sciences, and economics.

30B. Applied Finite Mathematics

(4) Staff

Prerequisite: Mathematics 30A.

Convex geometry, linear programming, simplex methods, game theory, elements of graph and network theory, dynamic programming applications and optimization problems and decision problems in economics and the social sciences.

31. Discrete Mathematics

(4) Staff

Prerequisite: Mathematics 11A.

Elements of discrete mathematics and combinatorial algorithms: permutations and combinations, graphs, trees, generating functions, recurrence relations, boolean algebras.

32. Introduction to Finite Mathematics

(4) Staff

Prerequisite: intermediate algebra (high school algebra).

Elementary set theory, binomial theorem and binomial coefficients, permutations, ordered samples, combinations, ordered partitions, tree diagrams, probability, conditional probability, independence, independent trials, random variables.

34A. Calculus for Social and Life Sciences

(4) Staff

Prerequisite: Mathematics 1 or 1S or the Algebra Diagnostic Test. Not open to students who have received credit for Mathematics 3A, 7A, or appropriate portions of 3S or 34S.

Calculus of one variable including differentiation curve sketching, max-min problems, exponential and logarithm functions, introduction to integration.

34B. Calculus for Social and Life Sciences

(4) Staff

Prerequisites: Mathematics 34A, 3A, appropriate portions of 3S or 34S. Not open to students who have received credit for Mathematics 3B or 7B or appropriate portions of 3S or 34S.

Techniques of integration, calculus of several variables including partial derivatives and max-min problems, multiple integrals, differential equations including separable equations and systems of linear equations.

34S. Introduction to Calculus

(1-8) Staff

Prerequisite: Mathematics 1 or 1S or 15 or 15S or the Algebra Diagnostic Test. Reduced credit for students who have taken corresponding

portions of Mathematics 3, 7, 34, or 3S. May be repeated for credit to a maximum of eight units. This is a self-paced version of Mathematics 34. Credit is assigned in proportion to the work completed, but students who fail to complete coursework as designated by the instructor by the drop deadline of the quarter will be administratively dropped from the course.

36. Mathematics in History

(4) Staff

Prerequisite: 1-1/2 years of high school algebra.

A concise history of mathematics from ancient times through the nineteenth century; its impact on western civilization and relations with the other aspects of culture. The development of ideas of infinity and space. Godel's completeness and incompleteness theorems.

92. Computer Laboratory

(1) Staff

May be repeated in conjunction with different courses for up to a total of three units of credit. Offered each quarter in conjunction with specified lower-division mathematics classes listed in the *Schedule of Classes*. Students enrolling in any of the specified classes are eligible to enroll in this course concurrently. Students will become familiar with certain computer facilities and with some computing language(s) which will be used to solve problems designed to enrich and supplement the material in the specified Mathematics course.

94. Group Studies in Mathematics

(1-4) Staff

Prerequisite: consent of instructor.

Lectures and discussions on special topics.

UPPER DIVISION

100A. Mathematics for Elementary Teaching I

(3) Staff

Prerequisites: high school algebra and geometry. Junior or senior standing required. Cannot be used to satisfy any requirement for mathematics or mathematical sciences major. May be taken concurrently with Mathematics 100B.

Set theory, numeration systems, properties of whole numbers and rational numbers, justification of computational procedures.

100B. Mathematics for Elementary Teaching II

(3) Staff

Prerequisites: high school algebra and geometry. Junior or senior standing required. Cannot be used to satisfy any requirement for a mathematics or mathematical sciences major. Mathematics 100A not a prerequisite; may be taken concurrently with Mathematics 100A.

Geometric concepts including lines, points, planes, curves, triangles, area, decimal numbers, measurement, including an introduction to the metric system, geometric transformations and symmetry, elementary concepts from probability.

101A. Classical Number Systems

(4) Staff

Prerequisite: Mathematics 3C or 7C or 34B or appropriate portions of 3S or 34S. Not open to students who have received credit for Mathematics 118A.

Especially suitable for prospective teachers. A conceptual rather than an axiomatic development starting with the natural numbers and progressing through the integral rational, real, and complex number systems, treating the basic properties of each.

101B. Elementary Real Analysis

(4) Staff

Prerequisite: Mathematics 101A. Not open to students who have received credit for Mathematics 118A.

Especially suitable for prospective teachers. Basic theory of real valued functions of a single real variable, limits, continuity, sequential convergence, differentiation, integration, fundamental theorem of calculus.

102A-B. Modern Elementary Geometry

(4-4) Staff

Prerequisite: Mathematics 3B or 7B or 34B or appropriate portions of 3S or 34S.

Especially suitable for prospective teachers. Critical review of the foundations and basic structure of plane and solid Euclidean geometry, based on the Birkhoff axioms. Special topics in geometry.

103. Introduction to Group Theory

(4) Staff

Prerequisite: Mathematics 8. Not open to students who have received credit for Mathematics 111A.

Intended primarily for prospective teachers. Permutation groups, cyclic groups, theory of finite groups, group homomorphisms and isomorphisms. Abelian groups. Applications to number theory and geometry.

104A. Introduction to Numerical Analysis

(4) Staff

Prerequisites: Mathematics 5B or 11A; and Computer Science 10 and 11FO. Not open to students who have received credit for Computer Science 110.

Numerical methods for solving nonlinear equations and systems of linear equations. Topics will include: error analysis, iterative methods for solving linear and nonlinear equations, Gauss elimination and matrix inversion, matrix norms, the determination of eigenvalues and eigenvectors. Students will write computer programs in FORTRAN.

104B. Numerical Analysis

(4) Staff

Prerequisite: Mathematics 104A (or Computer Science 110 with consent of instructor).

Numerical methods for interpolation and approximation, numerical differentiation and integration. Students will use the computer.

104C. Differential Equations with Numerical Methods

(4) Staff

Prerequisite: Mathematics 104B

Ordinary differential equations with an emphasis on numerical methods, including Euler's method, Runge-Kutta methods, systems of differential equations. Additional topics may include: boundary-value problems, numerical methods for solving partial differential equations. Students will use the computer.

105. Computer-Based Mathematics for Secondary School Teachers

(4) Staff

Prerequisites: Mathematics 8 and 5B, or 9 or 108A; and Computer Science 10 and 11FO.

Selected topics in algebra, number theory, geometry, matrix theory, calculus, and probability theory, with particular emphasis on computational methods. The study of a programming language (BASIC, PASCAL, or FORTRAN) will be interwoven with the mathematical topics. Students will use the microcomputer laboratory.

108A-B. Introduction to Linear Algebra

(4-4) Staff

Prerequisites: Mathematics 8 and 11A or 5B.

Vector spaces, inner product spaces, linear transformations, matrices, systems of linear equations, equivalence, determinants,

eigenvectors and eigenvalues, similarity, diagonalization, normal matrices, congruence, orthogonal, and unitary transformations.

108C. Advanced Linear Algebra

(4) Staff

Prerequisites: Mathematics 108A-B.

Invariant factors and elementary divisors, canonical forms, topics from advanced matrix theory, applied linear algebra, and group representation theory.

109A. Introduction to Mathematical Logic

(4) Staff

Prerequisite: Mathematics 108B or 110 or 111A or 136A or Philosophy 183. Not open to students with credit for Philosophy 184.

Symbolic logic, propositional and predicate calculi, models, and formal proof systems. The notions of consistency and completeness. Proof of the completeness theorem for first-order languages.

109B. Mathematical Logic

(4) Staff

Prerequisite: Mathematics 109A or Philosophy 184.

Topics may include: applications of proof theory in theorem proving and computer program verification. Godel's incompleteness theorem, model theory.

110. Set Theory

(4) Staff

Prerequisite: Mathematics 8 or consent of instructor.

Fundamentals of set theory, ordinal numbers, cardinal arithmetic, transfinite methods.

111A. Introduction to Abstract Algebra

(4) Staff

Prerequisites: Mathematics 8 and 11A or 5B or consent of instructor. Not open for credit to those students who have completed Mathematics 136A.

An introduction to algebraic structures, with an emphasis on groups.

111B-C. Abstract Algebra

(4-4) Staff

Prerequisite: Mathematics 111A or 136A.

Rings, fields, Galois theory.

113. Non-Euclidean Geometry

(4) Staff

Prerequisite: Mathematics 11A or 5B or appropriate portions of 5S.

Primarily an introduction to hyperbolic geometry with some discussion of other non-Euclidean systems.

114A-B. Geometry and Convexity

(4-4) Staff

Prerequisites: Mathematics 3C or 7C and 11A or 5B or consent of instructor.

An introduction to the study of convex bodies and surfaces (following a development of basic metric topology and affine algebra), with special emphasis on mathematical methods which are important in many fields of mathematics.

115A. Introduction to Number Theory

(4) Staff

Prerequisites: Mathematics 8 and 11A or 5B or appropriate portions of 5S.

Divisibility, congruences, primitive roots and indices, quadratic residues and the quadratic reciprocity law, number-theoretic functions.

115B-C. Number Theory

(4-4) Staff

Prerequisite: Mathematics 115A.

Diophantine equations, the distribution of primes, quadratic forms, continued fractions and the approximation of real numbers, algebraic number theory, partitions, density problems.

116. Combinatorial Analysis

(4) Staff

Prerequisite: Mathematics 8.

Elementary counting principles, binomial coefficients, generating functions, recurrence relations, the principle of inclusion and exclusion, distributions and partitions, systems of distinct representatives, applications to computation.

118A-B-C. Introduction to Real Analysis

(4-4-4) Staff

Prerequisites: Mathematics 11A-B-C or 5A-B-C or 5S and 108A.

The real number system, elements, of set theory, continuity, differentiability, the Riemann integral, functions of bounded variation, implicit function theorems, convergence processes, special topics.

119A-B. Ordinary Differential Equations

(4-4) Staff

Prerequisites: Mathematics 5A-B-C or 11A-B-C or the appropriate portions of Mathematics 5S.

Existence and uniqueness of solutions to ordinary differential equations, systems of equations, stability theory, examples from mechanics, calculus of variations. More advanced topics.

122A-B. Introduction to Theory of Complex Variables

(4-4) Staff

Prerequisites: Mathematics 11A-B-C or 5A-B-C or appropriate portions of Mathematics 5S.

Complex numbers, functions, differentiability, series extensions of elementary functions, complex integration, calculus of residues, conformal maps, mapping functions, applications.

124A-B. Advanced Engineering Mathematics

(4-4-4) Staff

Prerequisites: Mathematics 122A and concurrent enrollment of 122B or consent of instructor.

Advanced ordinary differential equations, partial differential equations, Fourier and Laplace transforms, separation of variables and generalized functions. Bessel functions, Legendre functions, and the gamma function. Other topics such as Sturm and Liouville theory, Hilbert spaces, potential theory, and the spectral theorem may be covered.

125A-B-C. Fluid Mechanics

(4-4-4) Staff

Prerequisites: Mathematics 11A-B-C or 5A-B-C or appropriate portions of 5S.

Formulation and basic properties of the principal mathematical models used in fluid mechanics. Continuity equation. Equations of motion. Bernoulli's equation. Reynold's number, ideal irrotational flow and surface waves on water. Linear shallow-water theory. Inviscid flow with vorticity. Viscosity. Instabilities.

131. Linear Optimization and Game Theory

(4) Staff

Prerequisite: Mathematics 108A or consent of the instructor.

Solving linear inequalities and the simplex method for finding the "best" situation. The duality theorem. Applications will include the equilibrium theorem of mathematical economics and the theory of two-person games. Opportunities will be available for students to use the computer.

132A. Introduction to Operations Research

(4) Staff

Prerequisites: Mathematics 3A-B-C or equivalent and 11A.

Linear programming: the simplex method, duality; applications to the transportation and assignment problems; sensitivity analysis; problem formulation.

132B. Introduction to Operations Research

(4) Staff

Prerequisite: Mathematics 132A.

Network analysis: shortest route, minimal spanning tree and maximal flow problems; PERT including the critical path method; dynamic programming; game theory; integer programming, nonlinear programming.

132C. Introduction to Operations Research

(4) Staff

Prerequisites: Mathematics 132A-B and either PSTAT 120A or PSTAT 121A or Economics 141A. Same course as PSTAT 132C.

Review of probability; queuing theory; waiting models; birth and death processes; applications; inventory theory; Markov chains, applications and decision models; computer simulation; component and system reliability; decision analysis; list and area searching.

136A. Introductions to Applied Algebra

(4) Staff

*Prerequisites: Mathematics 11A or 5B and 8.**Credit not offered for both 111A and 136A.*

An introduction to algebraic structure including semigroups and groups.

136B-C. Applied Algebra

(4-4) Staff

Prerequisite: Mathematics 111A or 136A.

Boolean algebras, fields and additional topics in applied algebra such as the mathematical theory of finite state machines, and the theory and construction of error correcting codes.

137A-B. Graph and Network Theory

(4-4) Staff

Prerequisite: Mathematics 108A or 111A or 136A or consent of instructor.

Basic elements of graph theory, including paths, circuits, trees, planarity, duality, covering, matching. Elements of network theory.

139. Topics in Discrete Mathematics with Applications

(4) Staff

Prerequisite: Mathematics 109A or 111A or 136A or consent of instructor.

Topics in combinatorial algebra and logic, and other aspects of discrete mathematics with applications. Possible topics include combinatorial semigroups, variable-length codes, information-lossless graphs, Thue systems and their word problems, the sequences of Morse and Thue, tiling problems, resolution theorem proving.

141. Multilinear Algebra

(4) Staff

Prerequisite: Mathematics 108B.

Duality, multilinear mappings, tensor spaces, symmetry classes, graded algebras, linear transformations on tensor spaces, induced transformations, inner products on tensor spaces, elementary representation theory.

144A. Discrete and Probabilistic Mathematical Modeling

(4) Staff

Prerequisites: Mathematics 120A-B or PSTAT 121A-B; and Computer Science 10 and 11FO.

Fundamental modeling principles. Topics from: simulation, optimization, networks, decision

trees, random walks and difference equations, Markovian analysis, game theoretic models, applications.

144B. Continuous Mathematical Modeling

(4) Staff

Prerequisite: Mathematics 5C, 11C, or 104C; and Computer Science 10 and 11FO.

Differential equation, partial differential equation, and integral equation models. Topics selected from: derivation of model equations from first principles, conservation, solution techniques, both analytical and numerical, perturbation analysis, applications.

145. Introduction to Topology

(4) Staff

Prerequisites: Mathematics 11A-B-C or Mathematics 5A-B-C or appropriate portions of Mathematics 5S.

Metric spaces, continuity, compactness. Classification of surfaces, Euler characteristic, fundamental groups. Further topics at the discretion of the instructor.

146. Calculus on Manifolds

(4) Staff

Prerequisites: Mathematics 11A-B-C or Mathematics 5A-B-C or appropriate portions of Mathematics 5S.

Calculus of several variables, inverse function theorem. Manifolds in n -dimensional Euclidean space. Differential forms and integration on manifolds Stokes' theorem.

147. Metric Differential Geometry

(4) Staff

Prerequisites: Mathematics 11A-B-C or 5A-B-C or appropriate portions of Mathematics 5S.

Differential geometry of surfaces in three-dimensional Euclidean space. First and second fundamental forms. Gaussian and mean curvature, geodesics, Gauss-Bonnet theorem.

150A-B-C. Introduction to the Theory of Computation

(4-4-4) Staff

Prerequisites: Mathematics 109A-B or 111A-B or 136A-B, or consent of instructor.

An introduction to algorithmic systems and their complexity, partial recursive functions, and sub-recursive functions and sets. Abstract automata, the theory of formal languages. An introduction to computational complexity theory.

155. Introduction to Combinatorial Algorithms

(4) Staff

Prerequisite: Mathematics 111A or 116 or 136A or 137A or consent of instructor.

Representation of combinatorial objects, searching, sorting, graphs. Emphasis to be given to questions of efficiency of algorithms.

160A-B-C. Advanced Calculus for Physical Sciences and Engineering

(4-4-4) Staff

Prerequisites: Mathematics 11A-B-C or 5A-B-C. This course is intended for students in the mathematical and physical sciences who need to know the topics covered in Mathematics 124A-B in greater mathematical depth.

Topics include limits, sequences, series, uniform convergence, continuity, uniform continuity, differentiation, integration, linear functionals, Fourier series, Fourier and Laplace transforms, calculus on surfaces, theorems of Gauss, Green, and Stokes, calculus of variations, linear operators, spectral theory, applications to the physical sciences and engineering.

172. Introduction to Actuarial Mathematics

(4) Staff

Prerequisite: Mathematics 12A recommended.

A survey of actuarial mathematics with some attention to life insurance, pension plans, and casualty insurance.

190. Special Topics in Mathematics

(4) Staff

Prerequisites: upper-division standing; an equivalent lower-division mathematics course; consent of instructor. No more than eight units of major credit will be given, but course may be repeated an unlimited number of times.

Information about the special topics to be presented may be obtained from the office of the Department of Mathematics.

192. Computer Laboratory

(1) Staff

*May be repeated in conjunction with different courses for up to a total of six units of credit.**Units do not count for upper-division mathematics major requirements.*

Offered each quarter in conjunction with specified upper-division mathematics classes listed in the *Schedule of Classes*. Students enrolling in any of the specified classes are eligible to enroll in this course concurrently. Students will become familiar with certain computer facilities and with some computing language(s) which will be used to solve problems designed to enrich and supplement the material in the specified mathematics course.

193. Internship in Mathematics

(1-4) Staff

Prerequisite: consent of instructor and of department. Limited to no more than four units total. Credit will not be given toward upper-division mathematics major requirements.

Faculty-sponsored academic internship in industrial or research firms.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisite: consent of instructor. Enrollment normally limited to 12 or fewer students.

Lectures and discussion on special topics.

199. Independent Studies in Mathematics

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in mathematics; 4) consent of instructor and department. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Students will receive no more than four units of credit towards the mathematics major.

GRADUATE COURSES

The department does not offer all the courses listed below each year, but does offer the following courses every year: Mathematics 201A-B-C, Mathematics 202A-B-C, Mathematics 220A-B-C, Mathematics 226A-B-C, Mathematics 204A, 247, 248. The department offers approximately six other one-year courses in mathematics, and two in computer science each year. Graduate courses of interest to computer science students are listed in the mathematics offerings. These courses are numbered Mathematics 251, 252, 253, 254, 255, and 261.

201A-B-C. Real Analysis

(4-4-4) Staff
Prerequisites: Mathematics 118A-B-C or consent of instructor
Topics in functions of a real variable, measure and integration and functional analysis.

202A-B-C. Complex Analysis

(4-4-4) Staff
Prerequisites: Mathematics 118A-B-C, 122A, or consent of the instructor.
A rigorous development of the more important topics in complex analysis.

204A-B-C. Numerical Methods for Partial Differential Equations

(4-4-4) Staff
Prerequisites: Mathematics 104A-B-C, 108A, 118A, 119A, or consent of instructor.
Topics include numerical treatment of partial differential equations, elliptic boundary value problems, hyperbolic and parabolic equations, stability, error estimates, accelerated convergence numerical treatment of integral equations, variational techniques Newton method applied to operator equations, and monotone operators.

205A-B-C. Topics in Applied Linear Algebra

(4-4-4) Staff
Prerequisites: Mathematics 108A-B, or equivalent, or consent of instructor.
Selected topics in applied linear algebra. The topics will vary from quarter to quarter.

206A-B-C. Mathematical Programming

(4-4-4) Staff
Prerequisite: consent of instructor.
Topological vector spaces. Separation, extreme points, and fixed point properties of convex sets. Systems of linear inequalities and games. Minimax, equilibrium points, and variational inequalities. Linear and quadratic programming. Kuhn-Tucker theorem. Simplex method and other algorithms. Dual systems of vector spaces and polarity. Analysis of convex functions. Fenchel's duality for convex programming. Conditions for an extremum in general mathematical programming problems.

209. Set Theory

(4) Staff
Prerequisite: consent of instructor.
Study of axiomatic set theory; topics include relations and functions, orderings, ordinal and cardinal numbers and their arithmetic, transfinite constructible sets, consistency and independence results of Godel and Cohen.

210A-B-C. Advanced Topics in the Theory of Real Functions

(4-4-4) Staff
Prerequisites: Mathematics 201A-B-C.
Special topics chosen by the instructor. Topics may include: the integrals of Perron, Denjoy, Khintchine, and others; the Baire classification of functions and the Borel classification of sets; the measure problem; density theorems; negligible sets; and functions of several real variables.

211A-B-C. Advanced Topics in Complex Variables

(4-4-4) Staff
Prerequisite: consent of instructor.
Special topics chosen by the instructor. Possible topics include: several complex variables; Riemann surfaces, potential theory, H^p spaces; entire and meromorphic functions; cluster sets; conformal mappings.

218A-B-C. Combinatorial Mathematics

(4-4-4) Staff
Prerequisites: Mathematics 108B and 111A-B.
Principle of inclusion and exclusion, recurrence relations, Ramsey's theorem, Polya's theorem, partially ordered sets, Mobius functions, arrangements with restrictions, systems of distinct representatives. Latin squares and rectangles, block designs, finite geometrics, Hadamard matrices, difference sets, (0,1) matrix theory, extremal problems.

220A-B-C. Modern Algebra

(4-4-4) Staff
Prerequisites: Mathematics 108A-B and 111A-B or consent of instructor.
Group theory, ring and module theory, field theory, Galois theory, other topics.

222A-B-C. Topics in Group Theory

(4-4-4) Staff
Prerequisites: Mathematics 108A-B and 111A-B-C, or consent of instructor.
Selected topics in group theory.

223A-B-C. Topics in Ring Theory

(4-4-4) Staff
Prerequisites: Mathematics 108A-B and 111A-B-C, or consent of instructor.
Selected topics in ring theory.

224A-B-C. Topics in Linear Algebra

(4-4-4) Staff
Prerequisites: Mathematics 108A-B-C consent of instructor.
Selected topics in linear algebra.

225A-B-C. Topics in Number Theory

(4-4-4) Staff
Prerequisites: Mathematics 108A-B and 111A-B-C, or consent of instructor.
Selected topics in number theory.

226A. Foundations of Topology

(4) Staff
Prerequisite: Mathematics 118A or equivalent.
Topological spaces, continuity, homeomorphisms, connectivity, compactness, subspaces, product spaces, quotient spaces, metric spaces, paracompactness, separation axioms, Urysohn's Lemma.

226B. Manifolds

(4) Staff
Prerequisite: Mathematics 226A or consent of instructor.
Topological manifolds, differential manifolds, inverse and implicit function theorems, Brown-Sard theorem, Transversality, tangent bundles, normal bundles, bordism and cobordism, classification of low dimensional manifolds, handle body structures.

226C. Homotopy Theory

(4) Staff
Prerequisite: Mathematics 226B or consent of instructor.
Homotopy groups, exact sequences, fiber spaces, covering spaces, van Kampen theorem.

227A-B-C. Advanced Topics in Geometric and Algebraic Topology

(4-4-4) Staff
Prerequisite: consent of instructor.
Topics, varying from year to year, include piecewise linear and differential topology, manifolds, fiber bundles and fiber spaces, homotopy theory, and spectral sequences.

228A-B-C. Topics in Functional Analysis

(4-4-4) Staff
Prerequisites: Mathematics 201A-B-C or consent of instructor.
Selected topics in functional analysis.

229A-B-C. Hilbert Space

(4-4-4) Staff
Prerequisites: Mathematics 108A-B and 118A-B-C.
Operator theory, $\ast$ -algebras of operators, both weakly closed (von Neumann algebras) and norm closed ($C^\ast$ -algebras). Unitary representations of locally compact groups and $\ast$ -representations of $C^\ast$ -algebras.

230A-B-C. Topological Groups

(4-4-4) Staff
Prerequisites: Mathematics 220A, 226A-B-C.
General properties of topological groups. Unitary representations of compact groups. Duality and structure of locally compact Abelian groups. Haar measure. Unitary representations of locally compact groups. Harmonic analysis. Special topics.

231A-B-C. Lie Groups and Lie Algebras

(4-4-4) Staff
Prerequisite: consent of instructor.
Differentiable manifolds, definition and examples of Lie groups, Lie group-Lie algebra correspondence, nilpotent and solvable Lie algebras, classification of semi-simple algebras over the complexes, representations of Lie groups and Lie algebras, special topics.

232A-B-C. Algebraic Topology

(4-4-4) Staff
Prerequisites: Mathematics 108A-B and 140A, or consent of instructor.
Singular homology and cohomology, exact sequences, Hurewicz theorem, Poincare duality.

233A-B-C. Nonlinear Functional Analysis

(4-4-4) Staff
Prerequisites: Mathematics 201A-B-C or consent of instructor.
General theory of locally convex topological vector spaces. Fixed point theory and applications in nonlinear analysis. Convex analysis and optimization problems.

239A-B-C. Applied Discrete Mathematics

(4-4-4) Staff
Prerequisites: Mathematics 111A-B-C or 136A-B or 137A-B or 139 or 150-151, or consent of instructor for Mathematics 239A; Mathematics 239A or consent of instructor for Mathematics 239B; Mathematics 239B or consent of instructor for Mathematics 239C.
Combinatorics on words. Variable length codes. Rewriting systems. Applications to mathematical models for problems in cryptocomplexity, fault tolerant systems, and path systems in graphs.

240A. Manifolds and Differential Geometric Structures

(4) Staff
Prerequisite: Mathematics 118A or consent of instructor.
Manifolds, vector bundles, fiber bundles, differential forms and integration. Lie groups and Lie algebras, de Rham cohomology.

240B-C. Global Riemannian Geometry

(4-4) Staff
Prerequisites: Mathematics 240A is prerequisite to 240B. Mathematics 240B is prerequisite to 240C.
Riemannian geometry, connections, and curvature. More advanced topics such as: Morse theory of geodesics, minimal surfaces, Laplace operator on a Riemannian manifold and Hodge's theorem.

241. Topics in Differential Geometry

(4) Staff
Prerequisite: consent of instructor.
Topics which vary from year to year, such as: minimal submanifolds of Riemannian manifolds, complex differential geometry, Cartan-Kahler theory of partial differential equations.

243A-B-C. Ordinary Differential Equations

(4-4-4) Staff

Prerequisites: Mathematics 119A-B; consent of instructor.

Ordinary differential equations in real and complex domains. Existence and differentiability of solutions. Analysis of singular points. Poincaré-Bendixson theorem, perturbation theory, Sturm-Liouville theory, asymptotic expansions, stability.

244A. Advanced Mathematical Models in Modern Economics

(4) Staff

Prerequisite: consent of instructor.

Mathematical models in modern economics selected from these topics: demand, production, input-output, competition, equilibrium stability, cycles, control, growth, welfare.

244B. Advanced Mathematical Models in Modern Engineering Science

(4) Staff

Prerequisite: consent of instructor.

Mathematical models in modern engineering sciences selected from these topics: networks, mechanical systems, optics, electromagnetics, energetics, information, entropy, statistical mechanics, quantum mechanics, solid state, plasmas.

244C. Advanced Mathematical Models in Modern Bioscience

(4) Staff

Prerequisite: consent of instructor.

Mathematical models in modern bioscience selected from these topics: bioenergetics, biocybernetics, biochemical and cell models, tissue and organ models, epidemiology, ecology and evolution, complexity, verification, qualitative dynamics control.

245A-B-C. Methods of Applied Mathematics (Linear Theory)

(4-4-4) Staff

Prerequisites: Mathematics 118A, Mathematics 201A-B-C. Also recommended that Mathematics 245A-B-C be taken BEFORE Mathematics 246A-B-C.

Ordinary differential equations with one and two point boundary data. Linear integral equations, Green's functions. Eigenvalue problems. Fourier integral. Partial differential equations. Equations with initial and boundary data, calculus of variations, applications to classical and quantum mechanics, electromagnetism, optics. Systems of differential equations, stability, feedback, optimal control, frequency domain methods, random processes and differential equations, analog and digital filters, unsteady behavior, applications to electrical and mechanical control systems.

246A-B-C. Partial Differential Equations

(4-4-4) Staff

Prerequisites: Mathematics 118A and Mathematics 201A-B-C. Also recommended: Mathematics 228A-B-C or 229A-B-C. An undergraduate course in partial differential equations is recommended.

Cauchy-Kowaleski theorem. Characteristics. Theory of initial value and boundary value problems for elliptic, hyperbolic, and parabolic equations. Existence and uniqueness of solutions.

247. Numerical Solution of Ordinary Differential Equations

(4) Staff

Prerequisite: Mathematics 104B.

Solution of boundary value problems; Dahlquist stability; linear eigenvalue problems; stiff equations.

248. Matrix Computations

(4) Staff

Prerequisite: Mathematics 104C.

LR-QR algorithms; error estimate for the solution of linear equations; linear least squares problem; linear programming; techniques for sparse matrices.

250A-B-C. Mathematical Logic

(4-4-4) Staff

Prerequisite: consent of instructor.

Introduction to axiomatic set theory. Equational logic. Formal systems in the first-order predicate calculus. Gödel's completeness and incompleteness theorems. The existence of unsolvable problems. Introduction to the theory of recursive functions. Survey of model theory, including the ultraproduct construction, compactness theorem, elementary extensions, Craig's interpolation lemma, saturated models.

251A-B-C. Foundations of Computer Science

(4-4-4) Staff

Prerequisite: Mathematics 150 or 151 or consent of instructor.

Basic concepts in the theory of computation. Formal models of algorithms and algorithmic systems—their completeness, correctness, complexity, and representation. Automation and formal language theory. Program schemes. Introduction to computational complexity.

252A-B. Theory of Formal Languages

(4-4) Staff

Prerequisite: Mathematics 251A.

Structure theory of classes of languages and their specification by means of generative devices, machines, and algebraic characterizations. Decidable and undecidable properties and the complexity of decidable properties. Much of the theory will be developed as an extension of the theory of context-free languages.

253. Computability and Recursive Functions

(4) Staff

Prerequisite: Mathematics 151 or consent of instructor.

Turing machines and other abstract notions of computability. Their equivalence and Church's hierarchies of recursive functions and predicates. Computational complexity.

254A-B-C. Algorithms and Complexity

(4-4-4) Staff

Prerequisite: Mathematics 154 or consent of instructor.

Basic topics in the study of algorithms and concrete complexity, arithmetic and analytic complexity, and combinatorial optimization. Topics include: information theoretic arguments; searching graphs; NP-complete problems; lower bounds based on algebraic methods; FFT techniques; parallel computing.

255A-B-C. Selected Topics in Computational Complexity Theory

(4-4-4) Book

Prerequisites: Mathematics 251A-B-C or consent of instructor.

The structure of complexity classes and complexity-bounded reducibilities; Kolmogorov complexity; relativizations; crypto-complexity; independence results; applications of logic and recursive function theory; random and interactive proof systems; circuit complexity.

260AA-ZZ. Seminars in Mathematics

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit.

Topics in algebra, analysis, applied mathematics, combinatorial mathematics, functional analysis,

geometry, statistics, topology, by means of lectures and informal conferences with members of staff.

261AA-ZZ. Seminars in Computer Science

(1-6) Staff

May be repeated for credit.

Topics in analysis of algorithms, automaton theory, computational complexity, formal language theory, foundations of automatic programming, mathematical software, numerical computation, program structure, and verification. Lectures or informal conferences will be held with members of the staff.

263. Math Colloquium

(1) Staff

Prerequisite: consent of the department graduate adviser.

270A-B-C. Special Topics in Algebra

(4-4-4) Staff

Prerequisite: B.A. or B.S. with mathematics major, or consent of instructor.

Intended for students working for junior college credential or M.A. in education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

271A-B-C. Special Topics in Geometry and Analysis

(4-4-4) Staff

Prerequisite: B.A. or B.S. with mathematics major, or consent of instructor.

Intended for students working toward a junior college credential or M.A. in Education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

280. Surveys of Contemporary Mathematics

(4) Staff

Prerequisite: consent of instructor.

An expository treatment of a topic of current interest in mathematics with sufficient detail to impart the flavor of the field. Where appropriate, applications to other fields of mathematics will be included. The course is designed for the non-specialist in the area treated. The topics will vary from quarter to quarter.

500. Teaching Assistant Practicum

(1-4) Staff

Prerequisites: appointment as teaching assistant and departmental approved. No unit credit allowed toward degree.

Supervised teaching of undergraduate mathematics courses.

501. Teaching Assistant Training

(1-2) Staff

Prerequisites: departmental and instructor approval. No unit credit allowed toward degree.

Consideration of ideas about the process of learning mathematics and discussion of approaches to teaching.

502. Teaching Associate Practicum

(1-5) Staff

Prerequisite: appointment as associate. No unit credit allowed toward degree.

Supervised teaching of undergraduate courses.

510. Readings for Area Examinations

(2-6) Staff

Prerequisites: enrollment in M.A. or Ph.D. program. Consent of instructor.

511. Foreign Language Training for Mathematical Research

(2-4) Staff
Prerequisites: enrollment in Ph.D. program. Consent of instructor.

596AA-ZZ. Directed Reading and Research

(1-6) Staff
Prerequisites: graduate standing and consent of instructor. May be repeated for credit as determined by department chair.

598AA-ZZ. Master's Thesis Research and Preparation

(1-6) Staff
Prerequisites: graduate standing and consent of instructor. No unit credit allowed toward degree.

599AA-ZZ. Ph.D. Dissertation Preparation

(1-6) Staff
Prerequisites: graduate standing and consent of instructor. Maximum of 12 units total.

Medieval Studies

Medieval Studies Program, Ellison Hall 5806 and 5808; Telephone (805) 961-2991. Advisory Committee Co-chairs: C. Warren Hollister and Jeffrey B. Russell.

Advisory Committee

Cynthia J. Brown, Ph.D. (French)
C. Warren Hollister, Ph.D. (History)
Jeffrey B. Russell, Ph.D. (History)
Alejandro Planchart, Ph.D. (Music)

Affiliated Faculty

Juan Bautista Avalu-Arce (Spanish)
Larry M. Ayres, Ph.D. (Art)
Alva W. Bennett, Ph.D. (Classics)
Alfredo A. Bonadeo, Ph.D. (Italian)
Cynthia D. Brown, Ph.D. (French)
Walter H. Capps, Ph.D. (Religious Studies)
Harold A. Drake, Ph.D. (History)
Francis A. Dutra, Ph.D. (History)
Sharon Farmer, Ph.D. (History)
Frank C. Gardiner, Ph.D. (English)
Richard Hecht, Ph.D. (Religious Studies)
C. Warren Hollister, Ph.D. (History)
Richard Homan, Ph.D. (Dramatic Art)
Ursula R. Mählendorf, Ph.D. (German)
Carol Pasternack (English)
Birger A. Pearson, Ph.D. (Religious Studies)
Giorgio Perissinotto, Ph.D. (Spanish)
Alejandro Planchart, Ph.D. (Music)
Robert Potter, Ph.D. (Dramatic Art)
Jeffrey B. Russell, Ph.D. (History)
Harvey L. Sharrer, Ph.D. (Spanish and Portuguese)

Medieval studies is an interdisciplinary program in which the civilization of the Middle Ages can be explored from the viewpoints of many traditional subject areas: history, literature, religious studies, drama, art, and music. The student can build a program around one or two of these disciplines enriched by the others, or organize a program in which several subject fields are more or less balanced. Medieval studies presents the student with the opportunity to investigate a variety of creative aspects of a major human culture.

Although no graduate degrees are offered in medieval studies, the program provides enrichment and an interdisciplinary perspective to students pursuing M.A. and Ph.D. degrees in the medieval areas of various traditional majors.

Doctoral candidates in medieval history, for example, are required to prepare a special field outside the Department of History relating to an aspect of medieval civilization. A series of lectures by distinguished medievalists from other universities in America and Europe, representing various disciplines, provides fresh intellectual perspectives to undergraduate medieval studies majors as well as to candidates for graduate degrees in medieval history, literature, art, music, and thought. In addition, undergraduate, graduate, and faculty medievalists meet periodically to hear and discuss scholarly papers and to exchange ideas about the many facets of medieval culture.

The UCSB Medieval Studies Program operates in close cooperation with the Medieval Academy of America, the Medieval and Renaissance Studies Center at UCLA, the International Congress on Medieval Studies, and the Haskins Society on Viking, Anglo-Saxon, Anglo-Norman, and Angevin History.

After completing specific prerequisites, students with a bachelor's degree in medieval studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Bachelor of Arts—Medieval Studies

Preparation for the major. History 4A-B. A reading knowledge of Latin and of at least one modern European language will be necessary for those who plan to continue their studies on the graduate level. In certain fields, Hebrew, Arabic, or Greek may be needed. For students not planning graduate work, a language is desirable but not required.

Upper-division major. Forty units from the following list, with the selection forming a coherent program that must be approved by a member of the medieval studies committee. Art History 153A-B-C-D-E-F, 155B; Comparative Literature 120; Dramatic Art 160B; English 111, 115, 152A-B, 197 (when course content is appropriate to medieval studies); French 106A, 136A-B-C-D, 137X; German 120; Greek 141; History 113B, 113Q, 114A-B-C, 114S, 115, 115Q, 116, 117, 145A, 150A, 155A, 195 (when course content is appropriate); Italian 110A-B, 114X-Y-Z, 116X, 139X; Latin 103, 140; Medieval Studies 100, 199; Music Activities 148, 148S; Music 173A-B, 179; Portuguese 105A, 125A; Religious Studies 100, 101, 106, 115A-B, 116-B, 131B-C, 134B, 135, 140A, 187, 188; Spanish 110A, 115A, 116, 119A, 121A-B, 122A-B, 123A, 183AA-ZZ (when course content is appropriate).

MEDIEVAL STUDIES COURSES

UPPER DIVISION

100. Aspects of Medieval Civilization

(4) Staff
An interdisciplinary course which examines a cultural whole: the political and intellectual history, literature, art, and architecture of a given center of medieval civilization (e.g., pre-conquest of England, medieval Spain, or the court of Charlemagne). Topics will vary and the course may be repeated for credit.

199. Independent Studies in Medieval Studies

(1-5)
Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three

quarters; 3) have completed at least two upper-division courses in medieval studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Special interdisciplinary study in medieval themes.

GRADUATE COURSES

The master's and doctoral degrees are offered by the several participating departments. No graduate degree in medieval studies is now offered.

Military Science (ROTC)

Military Science, Building 419; Telephone (805) 961-3042. Department Chair: Edward H. Littlejohn, Lt. Col.

Faculty

Michael B. Cervone, M.S., University of Southern California, Captain—Ordnance Corps, Assistant Professor (*systems management*)
Margaret Christensen, M.A., University of Utah, Major—Adjutant General's Corps, Assistant Professor (*English*)
Britt L. Edwards, Ph.D., UC Santa Barbara, Major—Military Intelligence, Assistant Professor (*political science*)
Edward H. Littlejohn, III, M.S., University of Southern California, Lieutenant Colonel—Aviation, Professor (*systems management*)
Douglas K. Macadams, M.P.A., Golden Gate University, Captain—Military Intelligence, Assistant Professor (*public administration*)
Edward A. Spohn, III, M.A., Webster University, Major—Field Artillery, Assistant Professor (*management*)

The military science curriculum is a part of the Army Reserve Officers Training Corps (ROTC) program that leads to a commission as a second lieutenant in the Active Army, Army Reserve, or National Guard. Enrollment is open to qualified men and women students.

The Army ROTC program is divided into two parts: (1) two years of lower-division subjects, or Basic Course, during which the student incurs no military obligation, and (2) two years of upper-division work, or Advanced Course, for selected students. Students in the Basic Course must complete Military Science 21 and five other lower-division military science courses before they can be considered for the Advanced Course. Freshmen and sophomores will be given priority in registering for lower-division military science courses.

Students who were unable to take the Basic Course may receive equivalent ROTC credit for these classes by attending a summer session at a designated Army installation or attending an on-campus two-week summer session. Attendees at off-campus summer sessions are given a travel allowance and are paid for their period of camp attendance.

Admission to the Advanced Course is limited to selected students who meet all academic and physical requirements. Enrollees must sign a contract with the U.S. Army agreeing to complete the course and to accept an officer's commission, if one is offered. In return, students receive a tax-free cash payment of \$100 per month for each school month they are enrolled in the program. In

addition, students may be eligible to join the National Guard or Reserve and receive pay for attending one weekend meeting a month.

Students selected for the Advanced Course attend a six-week camp between their first and second year of Advanced ROTC. They are given a travel allowance and are paid for their period of camp attendance.

Students who complete the Advanced Course are commissioned as second lieutenants in one of the specialties of the U.S. Army. Insofar as possible, the student's wishes and academic major will be considered in making assignments. Graduates are eligible for either active duty or part-time duty with the Army Reserve or National Guard. The period of active duty is normally three years. Students accepting ROTC scholarships incur a four-year active duty obligation. ROTC students who wish to obtain advanced degrees may be granted delays in reporting for active duty. Students commissioned as second lieutenants may request to serve with the National Guard or Reserve following three to six months of active duty.

The department also offers a general military science curriculum designed to conform to the academic pattern of the UCSB campus. For the student who does not wish to make the military a career, military science courses and the ROTC program will provide essential career preparation. The department's lower-division curriculum provides valuable knowledge concerning the military history of the United States, the role of the military in American society, and the workings of the national defense establishment. Several lower-division courses can be used to satisfy the American History and Institutions requirement. The department's upper-division curriculum gives students both theoretical and practical leadership and management skills.

All department instructors can advise students on academic matters, the ROTC program, and financial aid. In addition, the ROTC enrollment counselor is available for discussion of special options such as the two-year program or the scholarship program. Several publications, including brochures and fact sheets, are available in the department office.

MILITARY SCIENCE COURSES

Leadership laboratory required for all advanced ROTC students to provide the opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders. Basic students who enroll in ROTC courses are not required to attend leadership laboratory for course credit.

LOWER DIVISION

1A. American Defense Policy

(2) Edwards

Examination of American defense policy; the international environment and context of American foreign policy; evolution of U.S. strategy; arms control; limited war, insurgency, and international terrorism; as well as the theory of bureaucratic decision making with emphasis on contemporary issues. (F)

1B. U.S. Defense Establishment

(2) Edwards

The study of the development, organization, and function of the defense establishment. Includes the role of the President, the National Security Council, Secretaries of State and Defense. Congress, and the intelligence community. (W)

1C. The Military in a Democratic Society

(2) Christensen

A study of the varied missions of the U.S. Army, relating especially to military assistance and civic action programs, public works tasks, development of reserve forces, and training for unconventional warfare. (S)

6. Basic Military Science Field Study

(2) Cervone

Practicum in a field study environment. Student is given classroom instruction on leadership techniques, military courtesy, discipline, customs, traditions of the service, and career opportunities. Additionally, the students receive laboratory work in military skills such as map reading, rifle marksmanship, tactics, first aid, drill and ceremony, and physical training. (F)

7. American Military History Prior to the Twentieth Century

(2) MacAdams

A survey history of the development of the U.S. military policy from colonial origins through the end of the nineteenth century. Emphasis will be placed on the origins of the American civil-military relationship and on the changing nature of warfare. (W)

8. American Military History in the First Half of the Twentieth Century

(2) Edwards

A survey history of the ascendancy of the U.S. as a military power during the first half of the twentieth century. Emphasis will be placed on national strategy, the evolution of civil-military relationships, and the changing nature of warfare. (S)

9. Contemporary American Military History

(2) MacAdams

A survey history of the cold war era with emphasis on Korea, cold war military strategy, and Vietnam. Revolutionary doctrine and practice will also be examined through analysis of several contemporary conflicts in Asia, Latin America, and the Middle East. (S)

11. Vietnam: A Military History

(2) MacAdams

A survey history of American involvement in Vietnam, to include the background of the Vietnamese conflict, the nature of U.S. involvement, strategies, significant events, and the tactics used by the participants. (F)

15. Land Navigation and Orienteering

(1) Spohn

Basic map reading and compass skills. Principles of orienteering. Principles of basic field survival. Practical exercises in negotiating an orienteering course applied in the field. How to organize and administer a sport orienteering meet. (F,W,S)

20. Basic Mountaineering

(1) Spohn

Prerence given to lower-division students.

Basic rappelling and mountaineering skills with emphasis on equipment, techniques, knots and site selection. Students will apply these skills during a field trip. (F,W,S)

21. Basic Leadership Orientation

(2) Cervone

Prerequisite: consent of instructor.

Orientation to leadership and leadership techniques in a military organization. Introduction to the establishment and attainment of standards, methods of training, and qualitative/quantitative evaluation. Analysis of missions, branches and specialty fields within the army. (F,S)

22. Basic Military Physical Conditioning

(1) Spohn

Basic physical conditioning using the United States Army physical training program. Emphasis on cardio-vascular system and upper body strength. Focus towards Army Officer Training Corps cadets, although not limited to this group. (F)

23. Advanced Military Physical Conditioning

(1) Spohn

Advanced United States Army fitness techniques for physical conditioning. Students learn how to conduct a physical conditioning program to ensure good health and fitness. Focus towards Army Officer Training Corps cadets, although not limited to this group. (W)

UPPER DIVISION

131. Principles of Leadership

(2) Spohn

Prerequisite: enrollment limited to advanced ROTC cadets or consent of instructor.

The study of the principles of leadership, responsibilities, and basic qualities of a leader, leadership traits, and special problems of military leadership. The study of theories of management and organizational behavior and of the decision-making process. Additionally, familiarization with communication systems and procedures used in the military team. Leadership laboratory required for all ROTC students. (F)

132. Advanced Tactical Theory

(2) Spohn

Prerequisite: enrollment limited to advanced ROTC cadets or consent of instructor.

The advanced study of tactical theory within the framework of the military team. Familiarization with small military unit organizations and operations. Fundamentals of offensive and defensive combat and their applications. Includes one field trip as course requirement. Leadership laboratory required for all ROTC students. (W)

133. Principles of Military Instruction

(2) Spohn

Prerequisite: enrollment limited to advanced ROTC cadets or consent of instructor.

Introduction of military teaching techniques and principles of planning instruction. Familiarization with methods of instruction and practical application by the student, who is required to prepare several presentations which include teaching a lesson, and use of closed-circuit television for self-evaluation. Leadership laboratory required for all ROTC students. (S)

141. Military Management

(2) Christensen

Prerequisite: enrollment limited to advanced ROTC cadets or consent of instructor.

The study of the fundamentals of decision making, command, and control problems, staff relationships, evaluation of situations and analysis of courses of action. Leadership laboratory required for all ROTC students. (F)

142. Fundamentals of Military Law

(2) Christensen

Prerequisite: enrollment limited to advanced ROTC cadets or consent of instructor.

The study of military law and the fundamental concepts of military judicial procedures contained in the Uniform Code of Military Justice; rules of evidence, pretrial and appellate procedures. Leadership laboratory required for all ROTC students. (W)

143. The Profession of Arms: Ethics and Reality

(2) Littlejohn

Prerequisite: enrollment limited to advanced ROTC cadets or consent of instructor.

An analysis of the profession of arms, stressing the necessity for ethical and unimpeachable conduct: to include logistical problems and systems, subordinate-superior relationships, collective and individual training, lateral communication with peers, the role of warrant and non-commissioned officers, and customs and traditions of the U.S. Army. Leadership laboratory required for all ROTC students. (S)

190. Advanced Military Science Field Study

(4) Littlejohn

Prerequisite: consent of instructor.

Each student is placed in problem-solving and decision-making situations and required to respond with actions based upon knowledge gained in earlier courses in military science. (SS/F)

199. Independent Studies

(1-5) Littlejohn

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in military science. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Open only to advanced ROTC students approved by the department chair.

Independent studies with the professor. To permit study on a subject agreed by the student and professor, not covered by regular course offerings. (F,W,S)

Music

Department of Music, Music 1315; Telephone (805) 961-3261. Department Chair: Dolores M. Hsu.

Faculty

Edward Applebaum, Ph.D., UC Los Angeles, Professor (*theory and composition*)
 Suzanne Balderston, B.M., Oberlin Conservatory, Visiting Associate Professor (*harp*)
 Stuart Canin, The Juilliard School, Artist-in-Residence (*violin*)
 Roger E. Chapman, Ph.D., UC Los Angeles, Professor Emeritus
 Van A. Christy, Ph.D., Columbia University, Professor Emeritus
 Ronald Copes, M.M., University of Michigan, Associate Professor (*violin, chamber music*)
 Emma Lou Diemer, Ph.D., Eastman School of Music, Professor (*theory and composition*)
 Maurice Faulkner, Ph.D., Stanford University, Professor Emeritus
 Robert N. Freeman, Ph.D., UC Los Angeles, Associate Professor (*classical music*)
 Peter Racine Fricker, Hon. R.A.M., Royal College of Music, London, Professor (*theory and composition*)
 Karl Geiringer, Ph.D., Universities of Vienna and Berlin, Professor Emeritus
 John Gillespie, Ph.D., University of Southern California, Professor (*baroque music, American music, keyboard music*)
 John Hornschuch, M.M., University of Southern California, Lecturer (*double bass*)
 Dolores M. Hsu, Ph.D., University of Southern California, Professor (*19th-century music, music criticism, ethnomusicology*)



I joined the UCSB music department as a theory and composition teacher and keyboard performer in 1971 in order to share my own creative abilities as well as benefit from the progressive and friendly atmosphere of this school, reflected in the students, the departmental and university administration, the faculty and staff.

My composing, publishing, and performing had been in the traditional areas of choral and instrumental music, but in 1973 I began research into electronic music and helped establish a studio in the music department. My continuing work in this field now includes the use of microcomputers, digital samplers and keyboard synthesizers, and music notation systems. I have created many compositions with these instruments, sometimes including acoustic instruments and voices. This work challenges technology to be at the service of self-expression, and it influences style and structure in the composition of non-electronic music. It is fascinating to see changes that have come about in the development of music since the advent of electronic instruments.

I enjoy writing music in contemporary idioms for musicians at all stages of their development. The composer/teacher working within a university music department as stimulating and outstanding as this one must continue to be a productive writer of music. I am more than happy to oblige.

Emma Lou Diemer

Emma Lou Diemer
 Professor
 Department of Music

In addition to being a prolific composer, Dr. Diemer is also a gifted keyboard performer. Her creativity has been honored by awards from the National Endowment for the Arts, the Ford Foundation, and the Fulbright Fellowship Program. In 1987 she received a composition award from the American Society of Composers, Authors, and Publishers (ASCAP) for the 25th year in a row. Her commissioned works include *Sextet for Piano and Woodwind Quintet*, *The Prophecy*, *Four Poems by Alice Meynell*, and *Peace Cantata*. She has published sacred and secular works for orchestra, symphonic band, chamber ensembles, organ, piano, marimba, carillon, solo voice, and chorus.

Michael Ingham, M.A., Denver University, Professor (*voice*)
 Varujan Kojian, M.M., University of Southern California, Senior Lecturer (*Director, UCSB Symphony; instrumental conducting*)
 Stefan Krayk, Licence de Concerts, Ecole Normale de Musique, Professor Emeritus
 JoAnn Kuchera-Morin, Ph.D., University of Rochester, Eastman School of Music, Assistant Professor (*electronic and computer-generated music*)
 Ronald Leonard, Diploma, Curtis Institute of Music, Artist in Residence (*cello*)
 Mitchell Lurie, Diploma, Curtis Institute of Music, Senior Lecturer (*clarinet*)
 Andrew Malloy, M.M., The Juilliard School, Lecturer (*trombone*)
 Elizabeth Mannion, B.A. University of Washington, Professor (*voice*)
 Lester P. Monts, Ph.D., University of Minnesota, Associate Professor (*ethnomusicology and chamber music*)
 Wendell Nelson, D.M.A., Northwestern University, Professor (*piano*)
 Betty Oberacker, D.M.A., Ohio State University, Professor (*piano, chamber music*)
 Heiichiro Ohyama, A.G.S.M., Guildhall School of Music, London, Professor (*viola, violin, chamber music*)
 Alejandro Planchart, Ph.D., Harvard University, Professor (*medieval and renaissance music, Collegium Musicum*)
 William Prizer, Ph.D., University of North Carolina, Associate Professor (*renaissance and early baroque music, Collegium Musicum*)
 Geoffrey B. Rutkowski, M.M., University of Southern California, Professor (*cello, chamber music*)
 Martial Singher, Diploma, Paris Conservatoire, Chancellor's Artist-in-Residence (*voice*)
 Joan A. Smith, Ph.D., Princeton University, Associate Professor (*theory, 20th-century music*)
 Janice Trilck, M.A., UC Santa Barbara, Lecturer (*piano*)
 James Welch, D.M.A., Stanford University, Lecturer (*organ, carillon, harpsichord*)
 Dorothy Westra, M.S.M., Union Theological Seminary, Professor Emerita
 Clayton Wilson, M.M., Northwestern University, Professor Emeritus
 John Winter, B.M., University of Redlands, Lecturer (*oboe*)
 Gary Woodward, M.M., University of Southern California, Lecturer (*flute, chamber music*)
 Peter Yazbeck, Artist's Diploma, University of Toronto, Senior Lecturer (*piano*)
 Nora Yeh, Ph.D., UC Los Angeles, Assistant Professor (*ethnomusicology*)
 Carl Zytowski, M.A., University of Washington, Professor (*voice, opera, chorus, choral conducting*)

The Department of Music curriculum includes undergraduate courses which lead to completion of either of two degrees: (1) the Bachelor of Arts in music, with concentrations in composition, history, theory, or performance, or (2) the Bachelor of Music, a professional degree in performance. The undergraduate major programs are designed to serve as background for professional careers in music, as preparation for graduate studies, or as an area of concentration for a liberal arts education.

The graduate program includes courses leading to the M.A. degree in musicology, composition, theory, or performance, and the Ph.D. degree in musicology, composition, or theory.

Performance ensembles are available for all qualified students, and a wide range of undergraduate courses is offered for nonmajors. Advising for majors is handled by the departmental undergraduate adviser. Graduate students are advised

by faculty members in their area of emphasis. Various cash prizes and awards are offered each year to outstanding students enrolled in performance, musicology, theory, or composition. Further information concerning these prizes and awards is available from the Department of Music office.

After completing specific prerequisites, students with a bachelor's degree in music are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

NOTICE: Because the requirements for the B.M. and the B.A. in music are undergoing significant changes, incoming freshmen and transfer students must contact the Department of Music for information about the new undergraduate curriculum which was implemented in fall 1986. The following may not accurately reflect programs available to all incoming undergraduate students.

Requirements for entering music students. All new music majors, both freshmen and transfer students from other institutions or departments, are required to have a placement test in theory and placement auditions in class piano and performance. These are given only during registration week, at the beginning of each quarter, and should be taken prior to enrollment in music major classes.

Bachelor of Music

The Bachelor of Music degree is open by audition to specially qualified students in performance. The department recommends History 4A-B-C and French, German, or Italian as elective courses. Students must participate in student recitals and in at least one performance laboratory each quarter with or without unit credit. Students studying orchestral instruments must enroll in orchestra each quarter if their participation is needed. Information about the program and about General Education and major requirements for the degree is available from the Department of Music.

Preparation for the major. Music 4A-B-C-D-E-F; 5A-B-C-D-E-F; 7; 12A-B-C; sophomore audition; 31-32 or 33 (six units or less, determined by audition); performance courses determined by concentration (Music 19, 25, 26, 27, 28, 29, 30, 33); sophomore piano proficiency audition.

Upper-division major. Seventy-one upper-division units in music, including Music 102 or 103; 106; two courses selected from 160-189, at least one of which must be from 178-189 (eight units); 51 units in performance courses selected with the guidance of a faculty adviser, including junior recital (Music 199); Music 192 and 197 (senior audition and senior recital).

Bachelor of Arts—Music

Students majoring in music must meet the General Education requirements of the College of Letters and Science. The department recommends History 4A-B-C and French, German, or Italian as elective courses. Students must pass the sophomore audition, and must participate in student recitals and in at least one performance laboratory each quarter with or without unit credit. Students studying orchestral instruments must enroll in orchestra each quarter if their participation is needed. Students transferring from other institutions must complete at least three quarters within the department. Completion of one of the following concentrations will not be formally acknowledged on the student's official transcripts or diploma.

1. Composition Concentration

Preparation for the major. Music 4A-B-C-D-E-F; 5A-B-C-D-E-F; 7; 12A-B-C; sophomore composition; 31-32 (six units or less, determined by entrance audition); sophomore piano proficiency audition.

Upper-division major. Thirty-six upper-division units in music, including Music 101 or 102 or 103; 106; two courses selected from 160-189, at least one of which must be from 178-189 (eight units); 18 units in composition, theory, or history courses including four quarters of Music 108A-B, 109A-B-C, selected with the guidance of a faculty adviser (a minimum of eight units of composition is required); 192 (senior composition).

2. History Concentration

Preparation for the major. Music 4A-B-C-D-E-F; 5A-B-C-D-E-F; 7; 12A-B-C; sophomore paper; 31-32 (six units or less determined by entrance audition); sophomore piano proficiency audition.

Upper-division major. Thirty-six upper-division units in music, including Music 102 or 103; 106; two courses selected from 160-189, at least one of which must be from 178-189 (eight units); 18 units in theory, history, or composition courses, including 160A-B, selected with the guidance of a faculty adviser (101 strongly recommended); 192 (senior research paper).

3. Theory Concentration

Preparation for the major. Music 4A-B-C-D-E-F; 5A-B-C-D-E-F; 7; 12A-B-C; sophomore paper; 31-32 (six units or less, determined by entrance audition); sophomore piano proficiency audition.

Upper-division major. Thirty-six upper-division units, including Music 102 or 103; 106; two courses selected from 160-189, at least one of which must be from 178-189 (eight units); 18 units in theory, history, or composition courses, including 160A-B, selected with the guidance of a faculty adviser (101 strongly recommended); 160A-B, 192 (senior research paper).

4. Performance Concentration

Preparation for the major. Music 4A-B-C-D-E-F; 5A-B-C-D-E-F; 7; 12A-B-C; sophomore audition; 31-32 or 33 (six units or less determined by entrance audition); sophomore piano proficiency audition.

Upper-division major. Thirty-six upper-division units in music, including Music 102 or 103; 106; two courses selected from 160-189, at least one of which must be from 178-189 (eight units); 18 units in performance courses selected with the guidance of a faculty adviser, 192 (senior audition).

Honors Program

An honors program, which encourages outstanding students to their best efforts and recognizes their accomplishments, is available to qualified senior music majors. The program has specific guidelines for each of the four undergraduate concentrations. Further details are available from the Department of Music office.

GRADUATE PROGRAM

Master of Arts—Music

Five M.A. emphases are available in music. As described below, four require a thesis or composition and the fifth, the M.A. emphasis in musical performance, requires a recital and a supporting document.

Emphasis in Musicology, Ethnomusicology, Composition, or Theory

Admission

Applicants will normally be expected to possess a B.A. degree in music from UCSB or a degree based on equivalent training. Following guidance examinations taken at entrance, the department may specify certain prerequisites to remedy any deficiencies in undergraduate background.

Degree Requirements

A residency of six quarters, including thesis or composition, is generally expected. A satisfactory reading knowledge of French, German, or Italian must be demonstrated by examination to be passed by the end of the first year of residency. In certain cases, the department may accept substitution of another foreign language.

1. **Musicology.** Music 200A-B; one course from 201A or B or C; three seminars, each from a different historical period (261A-269B); additional units selected with the guidance of a faculty adviser; a thesis.

2. **Ethnomusicology.** Music 200A, 224, 225, 274A-B-C, 276; Music 222 during each quarter of residency; additional units selected with the guidance of a faculty adviser; a thesis.

3. **Composition.** Music 200A; 207; 208A-F; 250A or B or 251A or B or 252A or B or C; 257; 269A or B; one course from 261A-268B or from 279, 282-284, 284E, 287-288, 291-292; additional units selected with the guidance of a faculty adviser; a composition of substantial length; a concert (or the equivalent) of the student's compositions in which the student participates as performer or conductor.

4. **Theory.** Music 200A-B; 207; 250A or B; 269A or B; one course selected from 261A-268B; additional units selected with the guidance of faculty adviser—sections of 208 are encouraged; a thesis.

Emphasis in Musical Performance

Admission

Students will normally be expected to possess a B.A. degree from UCSB with a performance concentration, or a degree based on equivalent training. An entrance audition demonstrating graduate-level ability in performance is required. The department may specify certain prerequisites to remedy any deficiencies in undergraduate background.

Degree Requirements

A residency of six quarters is normally expected. Requirements include the following: (1) Music 220; 244; 295. Students majoring in conducting will take 230 and 231 in lieu of 220 and 244. (2) Music 200A and courses from 279, 282-284, 284E, 287-288, 291-292; additional courses selected with the guidance of a faculty adviser. (3) One to three quarters of ensemble units. Students studying orchestral instruments will be assigned specific ensemble requirements by their major professor. (4) Satisfactory reading knowledge of at least one foreign language, approved by the department and demonstrated by examination. (5) A public performance in the form of a graduate recital; a written document must be completed by the candidate, giving the historical background and an analysis of the recital material.

Doctor of Philosophy—Music

Emphasis in Musicology, Ethnomusicology, Composition, or Theory

Admission

In addition to fulfilling the general requirements for admission to graduate status, the department requires completion of an M.A. degree in music from UCSB or a degree based on equivalent training. Following guidance examinations taken at entrance, the department may specify certain prerequisites to remedy any deficiencies in the student's background. Students with an M.A. will normally take two additional years of graduate course work for the Ph.D.

Degree Requirements

Students in musicology and theory and composition following Plan A must demonstrate by examination a reading knowledge of French and German and of such other languages as the field of specialization may require. Normally, the Ph.D. candidate will pass a language examination prior to acceptance. Students in composition following Plan B may substitute a computer music language for a second foreign language. Ph.D. candidates in musicology and theory are required to take three courses in an approved field or fields outside of music. Ph.D. candidates in composition following Plan A are required to take two courses outside music; Plan B outside courses may be taken as electives. Those qualified in performance may earn three graduate units by means of a lecture-recital. Before being admitted to candidacy, students must pass a series of written and oral qualifying examinations in music history, ethnomusicology, theory, bibliography, and literature, covering the whole range of music history.

1. Musicology. Music 200A-B; two of 201A-B-C (those specializing in music prior to 1600 must take all three); 202; enrollment in one of the seminars (261A-269B) during each quarter of residency (normally a student will take a seminar in each historical period); a dissertation; defense of the dissertation.

2. Ethnomusicology. Music 200A, 200C, 226, 227A-B; Music 222 during each quarter of residency; two courses in the ethnography of music; additional units selected with the guidance of a faculty adviser; a dissertation; defense of the dissertation.

3. Composition, Plan A. Music 200A; 207; 208G-L; 250 and 251; 209I, 209L or 209N; 257; specified courses in music history including seminars in historical periods that have not been taken previously; one concert or lecture/recital in which the student participates as performer, conductor, or lecturer; an analytical document (topic to be chosen in consultation with the adviser); a portfolio of compositions, including at least one of substantial length.

Composition, Plan B. Music 200A; 207; 208G-L; 250 or 251; 209L; and 209I or 209N; 257; specified courses in music history; two concerts and/or lecture/recitals; and portfolio.

4. Theory. Music 200A-B; two of 201A-B-C; 202, 207; 250A or B; 251A or B; three courses from 261-269; specified courses in the history of music or composition or theory, including courses in those historical periods which have not been taken previously; a dissertation; defense of the dissertation.

MUSIC COURSES

LOWER DIVISION

4A-B-C. Musicianship

(1-1-1) Staff

Prerequisite: entrance interview.

A practical course in sight singing, aural analysis, and rhythmic studies.

4D-E-F. Musicianship

(1-1-1) Staff

Prerequisites: Music 4A-B-C.

Sight singing practicum.

5A-B-C. Music Theory

(3-3-3) Fricker

Prerequisite: entrance interview.

Music theory, including tonal and chromatic harmony, and an introduction to analysis.

5D. Music Theory

(3) Fricker

Prerequisites: Music 5A-B-C.

Further studies in harmony and counterpoint.

5E. Music Theory

(3) Fricker

Prerequisite: Music 5D.

Further studies in harmony and counterpoint; introduction to twentieth-century techniques.

5F. Music Theory

(3) Staff

Prerequisites: Music 5A-5E.

Sixth quarter of music theory sequence; form and analysis. An introduction to formal structures in music.

6. Jazz Harmony

(3) Applebaum

Prerequisite: Music 5D or consent of instructor.

Will introduce students to the theoretical and applied aspects of jazz harmony with emphasis on altered chords, harmonic progressions, and lead sheets.

8. Class Composition

(2-12) Staff

Prerequisite: consent of instructor. Primarily for the major.

Assignments in basics of music writing. For a selected number of students enrolled in Music 5A-F.

11. Fundamentals of Music

(4) Staff

The study of notes, scales, triads, inversions, rhythm, harmony, and musical terminology. Laboratory activities include keyboard orientation, sight singing, and ear training.

15. Music Appreciation

(4) Staff

Prerequisite: for the nonmajor.

A selective survey of music of western civilization, evolution of forms, styles, media. Designed to enable the student to listen with understanding.

16. Masterworks of Music

(4) Staff

Prerequisite: Music 15 or consent of instructor.

For the nonmajor.

A study of great works of music, the latter being chosen to represent various media, textures, and historical styles.

17. World Music

(4) Monts

No previous training in music required.

An introductory course surveying the unity and diversity of folk, traditional, and classical music of the non-Western world. Emphasis given to dance, theatre, musical instruments, and the role of music in society.

19. Harp

(1-3) Staff

Prerequisite: Music 31A or consent of instructor.

May be repeated for credit up to 18 units.

Beginning study in technique and literature of the harp.

20A-B-C. Elementary Voice

(1-1-1) Staff

Prerequisite: Music 11 or consent of instructor.

(Placement by audition.) Primarily for the instrumental music major and the music minor.

21. Intermediate Harpsichord

(1-3) Staff

Prerequisite: consent of instructor.

May be repeated for credit up to 18 units.

24. Carillon

(1-3) Welch

Prerequisites: Music 33 or equivalent and consent of instructor. May be repeated for credit up to 18 units.

An introduction to basic carillon techniques and performance of literature; a study of scoring, transcription, and arrangement for the carillon and the history and development of its use.

25. Intermediate Voice

(1-3) Ingham, Zytowski, Mannion

Prerequisite: for the vocal major. May be repeated for credit up to 18 units.

26. Intermediate Strings.

(1-3)

May be repeated for credit up to 18 units.

Lec. 1. Violin: Copes, Ohyama

Lec. 2. Viola: Ohyama

Lec. 3. Cello: Rutkowski

Lec. 4. Double bass: Hornschuch

Lec. 5. Guitar: Staff

27. Intermediate Woodwinds

(1-3)

May be repeated for credit up to 18 units.

Lec. 1. Oboe: Winter

Lec. 2. Flute: Woodward

Lec. 3. Clarinet: Lurie

Lec. 4. Bassoon: Staff

28. Intermediate Brass

(1-3)

May be repeated for credit up to 18 units.

Lec. 1. Trumpet: Staff

Lec. 2. French horn: Staff

Lec. 3. Trombone: Malloy

29. Intermediate Percussion

(1-3) Staff

May be repeated for credit up to 18 units.

30. Intermediate Organ

(1-3) Welch

Prerequisites: Music 31A-B or equivalent; consent of instructor. May be repeated for credit up to 18 units.

31A-B-C. Class Piano

(1-1-1) Trilck

Prerequisite: placement by audition. Primarily for music majors.

32A-B-C-D-E-F. Class Piano

(1-1-1-1-1-1) Trilck

Prerequisite: placement by audition. Primarily for the music major.

Intermediate class piano instruction. Includes scales, sight-reading procedures, transposition, harmonization at the keyboard, and appropriate piano literature.

32G-H-I. Class Piano

(1-1-1) Trilck

Prerequisite: placement by audition; primarily for the music major.

Intermediate class piano instruction, with emphasis on piano literature.

33. Intermediate Piano

(1-3) Nelson, Oberacker, Yazbeck

*Prerequisite: for piano majors only. May be repeated for credit up to 18 units.***34A-B. Keyboard Literature**

(2-2) Staff

Prerequisite: music majors only.

A: A study of the history and literature of keyboard music to Mozart.

B: A study of the history and literature of keyboard music from Beethoven.

34C. Sonata Class

(2) Oberacker

Prerequisite: primarily for performance majors; nonmajors may enroll with consent of instructor.

The study of selected sonata literature for orchestral instruments with piano. Emphasis will be on interpretative aspects of works from various historical periods. Performances and paper required.

35A-B-C. Piano Accompanying

(1-1-1) Staff

Prerequisite: piano majors only or consent of instructor.

An introduction to the study of accompaniment repertoire and performance (art song, instrumental literature, orchestral transcriptions, sight-reading).

50A-B. Continuo Playing and Baroque Accompaniment

(2-2) Staff

Prerequisites: music 5A-D. Audition at the keyboard. Majors only.

A. Fundamentals of basso continuo, reading of figured bass at sight, basic harmonic patterns of the seventeenth and eighteenth centuries.

B. Practical instruction in accompanying instruments and singers in music of the seventeenth and eighteenth centuries. Conventions of keyboard performance.

UPPER DIVISION**101. Twentieth-Century Techniques**

(4) Staff

Prerequisite: Music 5E.

A study of contemporary techniques through both written work and analysis.

102. Sixteenth-Century Counterpoint

(4) Staff

Prerequisite: Music 5E or equivalent.

A study of contrapuntal practices of the sixteenth century through analysis and compositional exercises.

103. Canon and Fugue

(4) Staff

Prerequisite: Music 5E or equivalent.

A study of contrapuntal practices of the eighteenth century through analysis and compositional exercises.

104. Musical Instruments of the World

(4) Staff

Prerequisite: Music 17.

A systematic study of musical instruments in world cultures, involving classification, distribution, acoustical phenomena, and physical typologies. Emphasis on cross-cultural, comparative analysis of solo and ensemble groupings, and the role of musical instruments in the study of acculturation, historical diffusion, and aesthetics.

105. Field and Laboratory Methods in Ethnomusicology

(4) Staff

Prerequisites: Music 17 and 176.

The development and execution of field research designs. Practical field experience using various techniques of data collection and management, including music recording, photography, filming, questionnaires, and interviewing. The use and interpretation of standard and innovative laboratory methods for processing data, including computer analysis.

106. Orchestration

(4) Diemer, Applebaum

Prerequisites: Music 5E or equivalent.

The range, tonal quality, transposition, and technical possibilities of individual instruments, and their use together in the orchestra.

106D. Timbre/Psychoacoustics

(4) Staff

Prerequisite: music majors.

Course explores use of timbre in twentieth-century music. Topics include: timbre and pitch; texture; masking; klangfarbenmelodie. Relevance of recent research in psychophysics and cognitive psychology to timbre, texture and klangfarbenmelodie will be explained.

107. Advanced Orchestration

(4) Fricker

Prerequisites: Music 106A-B or equivalent.

A study of advanced orchestration through written work and analysis. Includes both a historical survey of the development of the orchestra from the seventeenth century to the present and a review of various styles of orchestration in the twentieth century.

108A-B. Composition

(2-2) Applebaum, Diemer, Fricker

Prerequisites: Music 7 or equivalent and consent of instructor. Primarily for the composition major.

Assignments using small forms and incorporating contemporary techniques.

109A-B-C. Advanced Composition

(2-2-2) Applebaum, Diemer, Fricker

Prerequisites: Music 108A-B or equivalent and consent of instructor. For the composition major.

Assignments using larger forms and incorporating contemporary techniques.

109I. Introduction to C Music

(4) Staff

Prerequisites: music majors or nonmajors with consent of the instructor. May be repeated for credit up to 12 units.

Course is introduction to use of computers for musical composition. Topics include: Vi text editor; introduction to programming in C; music synthesis using C music; CARL sound file system. Previous experience with computer music desirable but not necessary.

109L. Electronic Music Techniques and Composition

(2) Staff

Prerequisites: Music 5E, 8, and consent of instructor. May be repeated for credit up to 12 units.

An introduction to laboratory techniques. Projects in electronic music composition.

109N. Special Topics in Electronic Music

(4) Staff

Prerequisite: Music 109L or consent of instructor. May be repeated for credit up to 16 units.

Presentation of new techniques in the field of electronic music, performance, and composition, with emphasis on microcomputer generated music.

109T. Music and Media

(2-4) Staff

Prerequisite: music majors or nonmajors with consent of instructor.

Creative projects in synthesized and acoustic sound. Synchronization with film using SMPTE time code. Interdisciplinary collaborations. Previous experience with computer/synthesizer/film desirable.

110A-B-C. Orchestral Score Reading and Analysis

(2-2-2) Staff

Prerequisites: Music 121A-B-C. For conducting majors only.

A study of major representative works in the orchestra repertoire.

110AA-BB-CC. Choral Score Reading and Analysis

(2-2-2) Zytowski

Prerequisites: 121AA-BB-CC. For conducting majors only.

A study of major representative works in the choral repertoire.

111. Sound Recording for Musicians

(2) Staff

Prerequisite: for the major.

A nonmathematical lecture/demonstration, providing basic understanding of the processes of sound recording, musical instrument amplification, stage and performance sound systems, as well as scoring music for multitrack recording techniques.

112A. History of Music: The Middle Ages

(3) Planchart, Prizer, Freeman

Prerequisites: Music 5C or equivalent. Consent of instructor.

History of music in western civilization from antiquity to 1400.

112B. History of Music: The Renaissance

(3) Freeman, Prizer

Prerequisites: Music 5C or equivalent. Consent of instructor.

History of music in western civilization from 1400 to 1600.

112C. History of Music: The Baroque

(3) Freeman, Prizer

Prerequisites: Music 5C or equivalent. Consent of instructor.

History of music in western civilization from 1600 to 1750.

112D. History of Music: The Classic Era

(3) Freeman, Planchart

Prerequisites: Music 5C or equivalent. Consent of instructor.

History of music in western civilization from 1725 to 1825.

112E. History of Music: The Romantic Era

(3) Hsu, Prizer
Prerequisites: Music 5C or equivalent. Consent of instructor.
History of music in western civilization from 1790 to 1918.

112F. History of Music: The Twentieth Century

(3) Prizer, Smith
Prerequisites: Music 5C or equivalent. Consent of instructor.
History of music in western civilization from 1870 to the present.

112L. Music Library Research Techniques

(1) Staff
Prerequisite: open to music majors only unless space available.
An introduction to the Music Library — its special tools and files; its major types of reference sources; its special services and collections. Intended to help students develop efficient music research techniques applicable to term papers, theses, etc.

113. Introduction to Piano Technology

(2) Staff
Prerequisite: piano performance majors or consent of instructor.
This course is designed to develop a professional relationship between the pianist and the technician. Topics include: a historical survey of the development of the piano, performance practice, familiarization with the mechanical parts of the piano, and proper care of the instrument.

114. Music and Popular Culture in Twentieth-Century America

(4) Staff
Prerequisite: for the nonmajor; six terms of college work.
A survey of the relationships between music and popular culture in twentieth-century America. Music to be discussed will include blues, jazz, and rock, as well as classical music. Emphasis will be on cultural, rather than technical aspects of music.

115. Symphonic Music

(4) Staff
Prerequisite: Music 15 or consent of instructor. For the nonmajor.
A study of selected symphonic works.

115B. History and Literature of Chamber Music

(4) Staff
Prerequisite: Music 15 or consent of instructor.
A survey of the masterworks of chamber music from the Baroque through the twentieth century. Includes works by Bach, Haydn, Schubert, Schumann, and Brahms.

116A. History and Literature of Hispanic-American Music

(4) Gillespie
Prerequisites: Music 15 or consent of instructor. For the nonmajor.
A study of the religious and secular music of Hispanic America, including both folk and art music, and their European sources.

117. History and Literature of Opera

(4) Zytowski
Prerequisites: Music 15 or consent of instructor. For the nonmajor.
A systematic historical survey of opera including selected musical illustrations.

118A-Z. History and Literature of Great Composers in Western Music

(4) Staff
Prerequisites: Music 15 or consent of instructor. For the nonmajor.
A survey of the life and stylistic development of the music of an individual composer selected from the fourteenth to the twentieth century.
A: Ludwig van Beethoven
B: J. S. Bach
C: Wolfgang Amadeus Mozart
D: Frederic Chopin
E: Haydn
F-Z: Other composers

119. History and Literature of Organ Music

(4) Staff
Prerequisites: Music 15 or consent of instructor. For the nonmajor.
A historical survey of composers and compositions for the organ with significant works of representative composers from each period studied in detail.

120A-B-C-D-E-F. Conducting

(2-2-2-2-2-2) Staff
Prerequisites: Music 106 and consent of instructor. Must be taken consecutively.
An introduction to the fundamental techniques of conducting and score reading.

120AA. Choral Conducting

(2) Zytowski
Prerequisites: Music 120A-B. For the conducting major.
An introduction to the fundamental techniques of choral conducting and score reading.

121A-B-C. Projects in Orchestral Conducting

(2-2-2) Staff
Prerequisites: Music 120A-B-C and consent of the instructor. For the conducting major only.
The advanced study of specific orchestral works and their preparation for public performance.

121AA-BB-CC. Projects in Choral Conducting

(2-2-2) Zytowski
Prerequisites: Music 120A-B; Music 120AA; consent of instructor. For conducting majors only.
The advanced study of specific choral works and their preparation for public performance.

123. Advanced Harp

(1-3) Staff
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.

124. Advanced Carillon

(1) Welch
May be reached for credit up to 18 units.
A continuation of Music 24, presenting advanced literature, advanced techniques of transcription and arrangement for the carillon, and a greater emphasis on actual performance.

125. Advanced Voice

(1-3) Ingham, Zytowski, Mannion
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.

126. Advanced Strings

(1-3)
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.
Lec. 1. Violin: Canin, Copes, Ohyama
Lec. 2. Viola: Ohyama
Lec. 3. Cello: Leonard, Rutkowski
Lec. 4. Double bass: Hornschuch
Lec. 5. Guitar: Staff

127. Advanced Woodwinds

(1-3)
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.
Lec. 1. Oboe: Winter
Lec. 2. Flute: Woodward
Lec. 3. Clarinet: Lurie
Lec. 4. Bassoon: Staff

128. Advanced Brass

(1-3)
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.
Lec. 1. Trumpet: Staff
Lec. 2. French horn: Staff
Lec. 3. Trombone: Malloy

129. Advanced Percussion

(1-3) Staff
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.

130. Advanced Organ

(1-3) Welch
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.

131. Advanced Harpsichord

(1-3) Gillespie, Trilck
Prerequisites: Music 21 or equivalent. Consent of instructor. May be repeated for credit up to 18 units.

132. Studies in Chinese Music

(4) Staff
Prerequisite: Music 17 or consent of instructor.
A study of the traditional and contemporary music of China: historical background and intercultural influences, instruments and ensembles, theatrical and dance music, music in social context; analysis of forms and styles; theory and practice; aesthetics.

133. Advanced Piano

(1-3) Nelson, Oberacker, Yazbeck
Prerequisite: passing of sophomore audition. May be repeated for credit up to 18 units.

134A-B. Piano Pedagogy

(1-1) Staff
Prerequisite: Music 33 or consent of instructor.
A. Study of various methods used in pedagogical research.
B. The study and teaching techniques of the standard repertoire.

135A-B-C. Piano Accompanying

(2-2-2) Staff
Prerequisites: Music 35A-B-C or consent of instructor. Music 135A, 135B, and 135C may each be repeated once for credit.
An advanced study of accompaniment repertoire and performance (art song, instrumental literature, orchestral transcription, sight-reading).

150. Oratorio / Song Repertoire

(2) Ingham
Prerequisite: Music 25 or consent of instructor. May be repeated for credit up to six units.
A detailed study of operatic literature and concert literature (lieder, melodies, songs, and pieces with instruments). The interpretation of vocal music as a preparation for performance.

151. String Repertoire

(2) Staff
Prerequisite: consent of instructor.
A study of selected topics relating to the performance, composition, or history of four-string instruments.

152. Brass Repertoire

(2) Staff

Prerequisite: consent of instructor.

A study of selected topics relating to the performance, composition, or history of brass instruments.

153. Woodwind Repertoire

(2) Staff

Prerequisite: consent of instructor.

A study of selected topics relating to the performance, composition, or history of woodwind instruments.

154. Percussion Repertoire

(2) Staff

Prerequisite: consent of instructor.

A study of selected topics relating to the performance, composition, or history of percussion instruments.

155. Guitar Repertoire

(2) Staff

Prerequisite: consent of instructor. May be repeated for credit up to six units.

A study of selected topics relating to the performance, composition, theory, or history of guitar music.

156A. Arranging I

(4) Staff

Prerequisite: for the major who has completed Music 4A-B-C and 5A-B-C, or consent of the instructor.

This is a basic course designed to cover the articulation, reharmonization, transposition, and phrasing techniques necessary to compose for rhythm and saxophone sections. Writing from the sketch is introduced as well.

156B. Arranging II

(4) Staff

Prerequisite: for the major who has completed Music 4A-B-C, 5A-B-C, and 156A, or consent of the instructor.

Covers writing for brass and horns and subsequently the entire modern stage band. Students learn to write in a variety of styles.

157. Composers Forum

(1) Staff

Prerequisites: Music 108A-B or consent of the instructor. May be repeated for credit up to six units.

Presentation and discussion of new works by students, faculty, and guest composers.

158A-B-C-D. Diction

(1-1-1-1) Ingham

Prerequisite: for Music 158A-B, Music 25 or consent of instructor. For Music 158C-D, primarily for voice majors; Music 25 or equivalent.

A: English diction.
B: Italian diction.
C: German diction.
D: French diction.

159. Opera Repertoire

(2) Mannion

Prerequisite: Music 25 or consent of instructor. May be repeated for credit up to eight units.

Study and coaching in complete operatic roles.

160A-B. Theory and Analysis

(4-4) Smith

Prerequisites: completion of Music 4A-F and Music 5A-F.

A: Tonal analysis. Analysis of large-scale formal structures and an introduction to modern linear analytical techniques.

B: Analysis of non-tonal and twelve-tone music.

160C. Special Topics in Music Theory

(4) Smith

Prerequisites: Completion of Music 4A-F and Music 5A-F.

Advanced study in various aspects of music theory.

162. Choral Literature

(4) Zytowski

Prerequisites: Music 12A-B-C or consent of instructor.

A historical and analytical survey of major choral works from the sixteenth century to the present.

163. Organ Music

(4) Staff

Prerequisites: Music 12A-B-C or consent of instructor.

An analytical survey of composers and compositions for organ with significant works of representative composers from each period studied in detail.

164. Chamber Music

(4) Staff

Prerequisites: Music 12A-B-C or consent of instructor.

An analytical study of the development of chamber music from its early beginnings to the present, with special emphasis on the changes in style.

165. Art Song

(4) Staff

Prerequisites: Music 12A-B-C or consent of instructor.

The development of the art song with special emphasis on the poetry and musical styles which evolved in each historical period.

167. National Elements in Music

(4) Staff

Prerequisites: Music 12A-B-C or consent of instructor.

In-depth discussion and analysis of music concentrating on the nineteenth and twentieth centuries of a particular country.

168. Notation and Transcription in Ethnomusicology

(4) Staff

Prerequisites: Music 4, 5, 17, 176. Discussion and analysis of existing notational methods. Investigations on etic and emic approaches to transcription of the music of non-Western cultures.**169. Studies in Keyboard Music**

(4) Gillespie, Nelson

Prerequisite: Music 5A-E or consent of instructor. Primarily for the major; nonmajors may enroll with consent of instructor.

A selective study of problems involving literature, performance, and analysis of piano and harpsichord music.

170. Studies in Asian American Music

(4) Yeh

Prerequisites: Music 5A-E, 12A-B-C (112A-F), or consent of instructor.

A study of the origins, cultural values, and functions of music in Asian American communities, including an examination of music in the theatre, religion, and festival. Special attention will be given to the classical and folk musics of recent immigrants in American urban centers.

171. Nineteenth-Century American Piano Music

(4) Gillespie

Prerequisites: Music 12A-B-C or consent of instructor.

A study of the development of American piano music as it progressed from the postrevolutionary

period through mid-century to late nineteenth-century romanticism.

172. Ethnomusicology Forum

(1) Monts

Prerequisite: consent of instructor.

A forum for the presentation of research and performances by students, faculty, and visiting scholars and performers. Students must be currently involved in a research project.

174A-B-C. Studies in Music Cultures of the World

(4-4-4) Monts, Gillespie, Hsu

Prerequisites: Music 12A-C or consent of instructor. Course 174A is not a prerequisite to 174B, which is not a prerequisite to 174C.

A survey of the music cultures of the world, the use and function of music in society and its relationship to the other arts; consideration given to musical instruments, theoretical systems, musical structure, and performance practice.

A: The Americas;

B: Europe, the Middle East and Africa;

C: Asia and the Pacific.

176. Studies in Ethnomusicology

(4) Monts

Prerequisites: Music 5A-E, 12A-C, or consent of instructor.

An introduction to the field of ethnomusicology using theories and methods derived from the social sciences and humanities. Topic areas to include transcription and analysis, musicians, musical instruments, music acculturation, and the function of music in society.

177. Opera and Music Drama

(4) Zytowski

Prerequisites: Music 7 and 12A-B-C or consent of instructor.

A study of the history and literature of opera and music drama from their origins to the present day.

178A-B. Performance Practices

(4-4) Prizer, Applebaum, Freeman

Prerequisites: Music 12A-B-C or consent of instructor.

A: A study, through selected works, of historical performance practices of vocal and instrumental music from the Middle Ages through the romantic era. Problems to be treated will include instrumentation, ornamentation, figured bass, rhythm, tempo, articulation, and expression.

B: A study, through selected works, of performance practices of twentieth-century music, with particular attention to new notational concepts and their execution.

179. Studies in Medieval Music

(4) Planchart

Prerequisites: Music 12A-B-C or consent of instructor. Primarily for the major emphasizing history and theory.

Introduction to the liturgy and music of the Middle Ages.

180. Studies in Renaissance Music

(4) Prizer

Prerequisites: Music 12A-B-C or consent of instructor. Primarily for the major emphasizing history and theory.

Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.

181. Studies in Baroque Music

(4) Gillespie

Prerequisites: Music 7 and 12A-B-C or consent of instructor.

A selective study of various stylistic and historical aspects of baroque music.

182. Studies in Classic Music

(4) Freeman

Prerequisites: Music 7 and 12A-B-C or consent of instructor.

A study of the classical style from its source in the early eighteenth century to its culmination in the works of Haydn, Mozart, and Beethoven.

183. Studies in Romantic Music

(4) Hsu

Prerequisites: Music 7 and 12A-B-C or consent of instructor.

The development of romanticism from eighteenth-century sources through the works of Strauss and Mahler.

184. Studies in Contemporary Music

(4) Fricker, Smith

Prerequisites: Music 7 and 12A-B-C or consent of instructor. For the major.

A course which traces the stylistic development of music since 1910 and discusses various trends in compositional techniques.

184E. History and Development of Electronic Music

(4) Diemer

Prerequisites: Music 7 and 12A-B-C.

A study of the development of electronic music with emphasis on styles and composers.

186. Studies in American Music

(4) Gillespie

Prerequisites: Music 7 and 12A-B-C or consent of instructor.

Selected studies of music in the United States from its colonial beginnings to the mid-twentieth century. The music will be studied intrinsically as well as viewed from its social and cultural backgrounds.

187. Strauss and Hofmannsthal

(4) Hsu and Exner

For majors, either in the Department of Music or Department of Germanic and Slavic Languages and Literatures. This is a related course to German 187.

An interdisciplinary course on the collaboration between composer and poet. A study of the correspondence and the operas with special emphasis on *Elektra*, *Der Rosenkavalier*, and *Ariadne*.

188. The French Art Song from Symbolism to Surrealism

(4) Hsu and Cushing

Prerequisite: consent of instructors. Open to music and French majors. May be taken for credit only once as either Music 188 or French 188.

An interdisciplinary study in text-music relationships from Faure to Poulenc; from Baudelaire to Eluard.

189. Poetry and Music of the French Renaissance

(4) Prizer

Prerequisites: open to French majors and music majors with a reading knowledge of French or consent of instructors.

An interdisciplinary study in the relationships between text and music in the Renaissance. Texts will include Marot, Ronsard, and Baif; music will include settings by Josquin, Claudin, and Lassus.

190. Studies in American Indian Music

(4) Yeh

Prerequisites: Music 5A-E, 12A-B-C (112A-F), or consent of instructor.

A survey of studies on the music of Native Americans, highlighting Indian nations of North America. Emphasis on the range and variety of musical forms and styles; and a sociocultural analysis of the relationship of music to ceremonial and ritual activities.

191. Special Topics

(2-4) Staff

Prerequisites: upper-division standing and consent of instructor.

Special seminar in selected problems of current musicology, ethnomusicology, theory, or performance.

192. Senior Auditions

(2) Staff

Required for graduation. Should be taken during final quarter before graduation.

Senior audition, paper, or composition.

193. Studies in African Music

(4) Staff

Prerequisite: upper-division standing.

An intensive study of the music traditions of sub-Saharan Africa. The course stresses the historical background and cultural influences, dance, musicians, instruments, and ensembles, and the analysis of styles and forms.

194A-B. Studies in Afro-American Music

(4-4) Staff

Prerequisite: upper-division standing.

A culture-historical study of Afro-American music in the United States, the Caribbean area, and Latin America. Emphasis will be placed on musical acculturation, music folklore, religious music, instruments, and the analysis of styles and forms.

A: The U.S.A.

B: The Caribbean and Latin America.

196. Honors Music

(4) Staff

Prerequisites: qualified upper-division students by invitation of instructor and consent of department chair.

An undergraduate seminar for honor students. Carefully selected topics intended to foster excellence in research, theory, composition, or performance.

197. Senior Recital

(2) Staff

Prerequisite: Music 192.

Required for bachelor of music students.

199. Independent Studies in Music

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in music. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Tutorial studies in special projects for qualified students in musicology, composition, theory, or performance.

GRADUATE COURSES**200A-B. Bibliography and Research Techniques**

(4-4) Staff

A: A survey of music bibliography and research methods for the graduate student.

B: Individual research projects and discussions designed to give the graduate student understanding of the different approaches to historical and systematic musicology. Primarily intended for the M.A. and Ph.D. in musicology or theory.

200C. Bibliography and Research Techniques

(4) Staff

Primarily intended for Ph.D. students in ethnomusicology.

Survey of bibliographic sources and individual research projects in ethnomusicology.

201A-B-C. Notation and Music: Their Historical Interrelation

(4-4-4) Planchart, Prizer

A: Plainchant-early polyphony-modal notation.

B: Black mensural notation from Franco of Cologne to the Ars subtilior.

C: White mensural notation, lute and keyboard tablatures.

202A-B. Seminar in Musicology

(4-4) Staff

Prerequisites: M.A. or equivalent with consent of instructor. For advanced students only. This is a two-quarter in-progress course with grading for both quarters given upon completion of the second quarter. Music 202A-B may be repeated.

A two-quarter doctoral seminar dealing with selected topics in musicology.

206D. Timbre/Psychoacoustics

(4) Staff

Prerequisite: consent of instructor.

Course explores use of timbre in twentieth-century music. Topics include: timbre and pitch; texture, masking; klangfarbenmelodie. Relevance of recent research in psychophysics and cognitive psychology to timbre, texture, and klangfarbenmelodie will be examined.

207. Seminar in Orchestration

(4) Staff

Survey of orchestral usage in the twentieth century.

208A-B-C-D-E. Graduate Composition

(4-4-4-4-4) Staff

Individual instruction in composition.

208F-G-H-I-J-K-L. Graduate Composition

(4-4-4-4-4-4-4) Staff

Individual instruction in composition.

209I. Introduction to C Music

(4) Staff

Prerequisite: consent of instructor. Previous experience with computer music desirable but not necessary.

Introduction to use of computers for musical composition. Topics include: Vi text editor; introduction to programming in C; music synthesis using C music; CARL sound file system.

209L. Electronic Music Techniques and Composition

(2) Staff

Prerequisite: Music 109L or consent of instructor. May be repeated up to 12 units.

Composition and research in electronic music.

209N. Special Topics in Electronic Music

(4) Staff

Prerequisite: Music 209L or consent of instructor. May be repeated up to 12 units.

Presentation of new techniques in the field of electronic music, performance, and composition with emphasis on microcomputer generated music.

209T. Music and Media

(4) Staff

Prerequisite: consent of instructor.

Creative projects in synthesized and acoustic sound. Synchronization with film using SMPTE code. Interdisciplinary collaborations. Previous experience with computer/synthesizer/film desirable.

210A-B-C. Score Reading and Analysis

(2-2-2) Staff

Prerequisite: conducting majors only.

The study of major representative works in the orchestral and choral repertoire.



In addition to a major concert by the University Symphony every quarter, the music department presents more than 150 concerts a year by groups that include chamber ensembles, string quartets, symphonic band, guitar ensembles, flute and brass choirs, opera theatre and several choral groups.

220. Graduate Performance

(3) Staff

Audition required for entrance. May be repeated for credit up to 12 units.

222. Ethnomusicology Forum

(2) Staff

Prerequisite: graduate standing.

A forum for the presentation of research and performances by students, faculty, and visiting scholars and performers. Students must be currently involved in a research or performance project.

223. Studies in Chinese Music

(4) Staff

Prerequisite: graduate standing.

A study of traditional and contemporary music of China: historical background and intercultural influences, instruments and ensembles, theatrical

and dance music, music in social context; analysis of forms and styles; theory and practice; aesthetics.

224. Musical Instruments of the World

(4) Staff

Prerequisite: graduate standing.

A systematic study of musical instruments in world cultures involving classification, distribution, acoustical phenomena, and physical typologies. Emphasis on cross-cultural, comparative analysis of solo and ensemble groupings, and the role of musical instruments in the study of acculturation, historical diffusion, and aesthetics.

225. Field and Laboratory Methods in Ethnomusicology

(4) Staff

Prerequisite: Music 276.

The development and execution of field research designs. Practical field experience using various

techniques of data collection and management, including music recording, photography, filming, questionnaires, and interviewing. The use and interpretation of standard and innovative laboratory methods for processing data, including computer analysis.

226. Notation and Transcription in Ethnomusicology

(4) Staff

Prerequisites: Music 276 and graduate standing.

Discussion and analysis of existing notational methods. Investigations on etic and emic approaches to transcription of the music of non-Western cultures.

227A-B. Seminar in Ethnomusicology

(4-4) Staff

Prerequisite: graduate standing in musicology.

A two-quarter graduate seminar examining special problems, current theories, analytic procedures, and recent innovations in ethnomusicology.

230. Graduate Instrumental Conducting

(3) Staff

Audition required for entrance. May be repeated for credit up to 18 units.

Advanced study in conducting instrumental ensembles.

231. Graduate Vocal Conducting

(3) Staff

Audition required for entrance. May be repeated up to 18 units.

Advanced study in preparation of and conducting vocal and choral ensembles.

235A-B-C. Accompanying Techniques and Repertoire

(2-2-2) Staff

Prerequisite: piano majors only or consent of instructor.

Emphasizes advanced accompaniment techniques, the intensive study of the French and German song cycle, secco recitative, and orchestral score-reading.

250A-B. Seminar in Music Theory

(4-4) Smith

Topics in theoretical research. Content will vary depending on instructor.

A: Literature and theory.

B: Selected topics in music theory.

251A-B. Seminar in the History of Theory

(4-4) Smith, Planchart

A: History of early music theory.

B: History of music theory from Rameau to the present.

251C. Seminar in the History of Theory

(4) Staff

A survey of modern speculative theory.

252A-B. Seminar in Schenkerian Analysis

(4-4) Staff

Prerequisite: Music 252A is prerequisite to 252B.

A: Readings in the theory of Schenkerian analysis. Basic analytical techniques.

B: Advanced reading in Schenkerian theory. Analysis of large forms.

252C. Special Topics in Analysis

(4) Staff

Prerequisites: Music 252A-B.

Modern analytical techniques. Possible topics include set theory, twelve-tone analysis, and theories of perception.

257. Composers Forum

(2) Staff

*Prerequisite: 208 or consent of instructor. May be repeated for credit up to 16 units.**A forum for the presentation and discussion of new works by student, faculty, and guest composers. Participation and paper required.***258. Oratorio/Song Repertoire**

(3) Staff

Prerequisite: consent of instructor.

A detailed study of operatic literature and concert literature (lieder, melodies, songs, and pieces with instruments) for graduate students. The interpretation of vocal music as a preparation for performance.

260A-B. Theory and Analysis

(4-4) Smith

May not be repeated for credit.

A study of the theoretical aspects of music, including analysis of formal structures and melodic and harmonic development.

260C. Special Topics in Music Theory

(4) Smith

May not be repeated for credit.

Advanced study in various aspects of music theory.

261A-B. Seminar in Music of the Middle Ages

(4-4) Planchart

A: Origins, evolution, and structure of Christian liturgy and chant.

B: European polyphony.

263A-B. Seminar in Music of the Renaissance.

(4-4) Planchart, Prizer

A: Sacred music, 1350 to 1600.

B: Secular music, 1400 to 1600.

265A-B. Seminar in Music of the Baroque Period

(4-4) Gillespie, Prizer

A: Early baroque.

B: Late baroque

266A-B. Seminar in Music of the Classical Period

(4-4) Freeman, Geiringer

A study of classical style through:

A: Selective forms.

B: Schools and composers.

268A-B. Seminar in Music of the Romantic Period

(4-4) Hsu

A: Study of the origins of romantic music and its development to 1850.

B: Study of late romanticism with special emphasis on music at the turn of the century.

269A-B. Seminar in Music of the Twentieth Century

(4-4) Applebaum, Diemer, Fricker, Smith

A: Style and theory.

B: Special topics.

270. Studies in Asian American Music

(4) Yeh

Prerequisite: graduate standing.

A study of the origins, cultural values, and functions of music in Asian American communities, including an examination of music in the theatre, religion, and festival. Special attention will be given to the classical and folk musics of recent immigrants in American urban centers.

271. Nineteenth-Century American Piano Music

(4) Gillespie

A study of the development of American piano music as it progressed from the postrevolutionary

period through mid-century to late nineteenth-century romanticism.

272. Studies in Keyboard Music

(4) Staff

Prerequisite: primarily for the major emphasizing keyboard performance.

A selective study of problems involving literature, performance, and analysis of piano and harpsichord music.

274A-B-C. Studies in Music Cultures of the World

(4) Monts, Gillespie, Hsu

Course 274A is not a prerequisite to 274B, which is not a prerequisite 274C.

A survey of the musical cultures of the world, the use and function of music in society and its relationship to the other arts; consideration given to musical instruments, theoretical systems, musical structure and performance practice.

A: The Americas;

B: Europe, the Middle East and Africa;

C: Asia and Oceania.

275. Seminar in Music Criticism

(4) Hsu

Investigation of important critical writing in music from the early eighteenth century to the present with study of related works in the field of aesthetics. Analysis of the scope and impact of criticism in the musical life of each period.

276. Studies in Ethnomusicology

(4) Monts

An introduction to the field of ethnomusicology using theories and methods derived from the social sciences and humanities. Topic areas to include transcription and analysis, musicians, musical instruments, music acculturation, and the function of music in society.

277. Opera and Music Drama

(4) Staff

A study of the history and literature of opera and music drama from its origin to the present day.

278A-B. Performance Practices

(4-4) Prizer, Applebaum, Freeman

A: A study, through selected works, of historical performance practices of vocal and instrumental music from the Middle Ages through the romantic era. Problems to be treated will include instrumentation, ornamentation, figured bass, rhythm, tempo, articulation, and expression.

B: A study, through selected works, of twentieth-century music with particular attention to new notational concepts and their execution.

279. Studies in Medieval Music

(4) Planchart

Primarily for the history and theory emphases.

Introduction to the liturgy and music of the Middle Ages.

280. Ethnomusicology: Theory and Practice

(4) Hsu

Study of the evolution of the discipline, its theories, and its methods. Major aspects of ethnomusicological research exemplified in the study of music in Chinese history.

281. Interdisciplinary Studies

(4) Staff

282. Studies in Classical Music

(4) Freeman

A study of the classical style from its source in the early eighteenth century to its culmination in the works of Haydn, Mozart, and Beethoven.

283. Studies in Romantic Music

(4) Hsu

The development of music since 1810 and various trends in composition.

284. Studies in Contemporary Music

(4) Fricker, Smith

A course which traces the stylistic development of music since 1910 and discusses trends in compositional techniques.

284E. History and Development of Electronic Music

(4) Diemer

Prerequisites: Music 184E or consent of instructor.

A study of the development of electronic music with emphasis on styles and composers.

286. Studies in American Music

(4) Gillespie

Selected studies of music in the United States from its colonial beginnings to the mid-twentieth century. The music will be studied intrinsically as well as viewed from its social and cultural backgrounds.

287. Strauss and Hofmannsthal

(4) Hsu and Exner

An interdisciplinary course in the collaboration between composer and poet. A study of the correspondence and the operas with special emphasis on *Elektra*, *Der Rosenkavalier*, and *Ariadne*.

288. The French Art Song from Symbolism to Surrealism

(4) Hsu and Cushing

Prerequisite: consent of instructors.

An interdisciplinary study in text-music relationships from Faure to Poulenc; from Baudelaire to Eluard.

289. Poetry and Music of the French Renaissance

(4) Prizer and Duval

Prerequisites: music graduate students: reading knowledge of French. Others: consent of instructors.

An interdisciplinary study in the relationships between text and music in the Renaissance. Texts will include Marot, Ronsard, and Baif; music will include settings by Josquin, Claudin, and Lassus.

290. Studies in American Indian Music

(4) Yeh

Prerequisite: graduate standing.

A survey of studies on the music of Native Americans, highlighting Indian nations of North America. Emphasis on the range and variety of musical forms and styles; and a sociocultural analysis of the relationship of music to ceremonial and ritual activities.

291. Studies in Renaissance Music

(4) Prizer

Primarily for the theory and history emphases.

Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.

292. Studies in Baroque Music

(4) Gillespie

A selective study of various stylistic and historical aspects of baroque music.

293. Studies in African Music

(4) Monts

Prerequisite: graduate standing in music or consent of instructor.

An intensive study of the music traditions of sub-Saharan Africa. The course stresses the historical background and cultural influences, dance, musicians, instruments and ensembles, and the analysis of forms and styles.

294A-B. Studies in Afro-American Music
(4-4) Monts

Prerequisite: graduate standing in music or consent of instructor.

A culture-historical study of Afro-American music in the United States, the Caribbean area, and Latin America. Emphasis will be placed on musical acculturation, music folklore, religious music, instruments, and the analysis of forms and styles.
A: The U.S.A.
B: The Caribbean and Latin America.

295. Graduate Recital

(2-6) Staff

Preparation of public recital required for degree.

501. Directed Teaching in Music

(2-4) Staff

Prerequisite: appointment as teaching assistant.
Covers development of teaching techniques especially oriented to lower-division instruction. Theoretical aspects covered at beginning of each quarter. Practical techniques discussed including weekly meeting with class instructor. Required course for all teaching assistants.

502. Teaching Practicum

(2-4) Staff

Prerequisite: appointment as teaching assistant or associate. No unit credit allowed toward advanced degree.

Teaching assistant: leads discussion of topics covered in the lecture. Associate: assumes full responsibility for the teaching of one or more courses.

590-series courses may be taken for a maximum of 24 units.

594AA-ZZ. Special Topics

(2-4) Staff

Special seminar in selected problems of current musicology, ethnomusicology, composition, theory, or performance.

595AA-ZZ. Group Studies

(2-4) Staff

Critical review of research in selected problems of musicology, ethnomusicology, composition, theory, or performance.

596AA-ZZ. Directed Reading and Research

(2-4) Staff

Individual tutorial for research in musicology, ethnomusicology, composition, theory, or performance; instructor will usually be student's major professor.

598AA-ZZ. Preparation for the Master's Degree

(1-12) Staff

Prerequisite: no unit credit allowed toward advanced degree.

Instructor will be chair of student's thesis committee in musicology, ethnomusicology, composition, theory, or performance.

599AA-ZZ. Ph.D. Dissertation Research and Preparation

(1-12) Staff

Instructor will be chair of student's doctoral committee.

MUSIC PERFORMANCE LABORATORIES

LOWER DIVISION

Music courses 36 through 49 may be repeated for credit up to six units with the exception of

Music 44. Enrollment by audition or consent of instructor.

A35. UCSB Gold 'n Blues Band

(1) Nash

Prerequisite: consent of instructor. May be repeated for credit up to eight units.

A36. Men's Chorus

(1) Zytowski

A36S. Men's Chorus—Schubertians

(1) Zytowski

Prerequisite: concurrent enrollment in Music A36 required.

A37. UCSB Collegiate Chorale

(1) Zytowski

A37S. Chamber Choir

(1) Zytowski

Prerequisites: by audition only. Concurrent enrollment in Music A 37 required. For lower-division conducting majors. Special laboratory chorus.

A37W. Women's Ensemble

(1) Zytowski

Prerequisites: by audition or consent of instructor. For lower-division women. Performance laboratory.

A38. Opera Workshop

(1) Zytowski

A39. Guitar Ensemble

(1) Staff

Prerequisite: for lower-division students.

A40. New Music Ensemble—Prisms

(1) Smith

Primarily for the music major.

A41. Piano Ensemble

(1) Staff

A42. Orchestra

(1) Staff

Prerequisite: for lower-division students.

A43. Flute Choir

(1) Woodward

A44. Chamber Music Ensemble

(1) Staff

May be repeated for credit up to nine units.

A45. Brass Choir

(1) Staff

A46. Woodwind Ensemble

(1) Staff

A47. Symphonic Band

(1) Staff

A47S. Jazz Ensemble

(1) Staff

A48. Collegium Musicum: Cappella Cordina

(1) Planchart, Prizer

A48S. Collegium Musicum: Musica Antiqua

(1) Planchart, Prizer

A49. Percussion Ensemble

(1) Staff

A70AA-ZZ. Ethnomusicology: Performance Ensemble

(1-2) Staff

Group performance of music from selected world cultures.

UPPER DIVISION

Music courses 136 to 149 may be repeated for credit up to nine units with the exception of Music A 137S, 139, 142, and 144. Enrollment by audition or consent of instructor.

A105AA-ZZ. Ethnomusicology: Performance Ensemble

(1-2) Staff

Prerequisite: consent of instructor.

Group performance of music from selected world cultures.

A135. UCSB Gold'n Blues Band

(1) Nash

Prerequisite: consent of instructor. May be repeated for credit up to eight units.

A136. Men's Chorus

(1) Zytowski

A136S. Men's Chorus-Schubertians

(1) Zytowski

Prerequisite: concurrent enrollment in Music A 136 required.

A137. UCSB Collegiate Chorale

(1) Zytowski

A137S. Chamber Choir

(1) Zytowski

Prerequisites: by audition only. Upper-division standing. For upper-division conducting majors. Concurrent enrollment in Music A 137 required. Special laboratory chorus.

A137W. Women's Ensemble

(1) Zytowski

Prerequisites: by audition or consent of instructor. For upper-division women. Performance laboratory.

A138. Opera Workshop

(1) Zytowski

A139. Guitar Ensemble

(1) Staff

Prerequisite: for upper-division students. May be repeated up to six units.

A140. New Music Ensemble-Prisms

(1) Smith

Primarily for the music major.

A141. Piano Ensemble

(1) Staff

A142. Orchestra

(2) Staff

Prerequisites: for upper-division students. May be repeated for credit up to 18 units.

A143. Flute Choir

(1) Woodward

A144. Chamber Music Ensemble

(2) Staff

Entrance by audition or consent of instructor. May be repeated up to 18 units.

A145. Brass Choir

(1) Staff

A146. Woodwind Ensemble

(1) Staff

A147. Symphonic Band

(1) Staff

A147S. Jazz Ensemble

(1) Staff

A148. Collegium Musicum: Cappella Cordina
(1) Planchart, Prizer

A148S. Collegium Musicum: Musica Antiqua
(1) Planchart, Prizer

A149. Percussion Ensemble
(1) Staff
Prerequisite: for upper-division students. May be repeated for credit up to six units.

GRADUATE COURSES

Music A courses 236 to 249 may be repeated for credit of up to 12 units (with the exception of Music A 240). Enrollment by audition or consent of instructor.

A221AA-ZZ. Ethnomusicology: Performance Ensemble
(1-2) Staff
Prerequisites: consent of instructor.
Group performance of music from selected world cultures.

A236. Men's Chorus
(2) Zytowski

A236S. Men's Chorus — Schubertians
(2) Zytowski
Prerequisite: concurrent enrollment in Music A236 required.

A237. UCSB Collegiate Chorale
(2) Zytowski

A237S. Chamber Choir
(2) Zytowski
Prerequisites: by audition only. Concurrent enrollment in Music A 237 required.
Special laboratory chorus for graduate conducting majors.

A237W. Women's Ensemble
(2) Staff
Prerequisite: by audition or consent of instructor.
Performance laboratory for graduate women.

A238. Opera Workshop
(2) Zytowski

A239. Guitar Ensemble
(2) Staff
Prerequisites: graduate standing and consent of instructor.
Preparation, rehearsal, and performance of ensemble literature for more than one guitar.

A240. New Music Ensemble — Prisms
(2) Smith

A241. Piano Ensemble
(2) Staff

A242. Orchestra
(2) Staff

A243. Flute Choir
(2) Woodward

A244. Chamber Music Ensemble
(2) Staff

A245. Brass Choir
(2) Staff

A246. Woodwind Ensemble
(2) Staff

A247. Symphonic Band
(2) Staff

A247S. Jazz Ensemble
(2) Staff

A248. Collegium Musicum: Cappella Cordina
(2) Planchart, Prizer

A248S. Collegium Musicum: Musica Antiqua
(2) Planchart, Prizer

A249. Percussion Ensemble
(2) Staff

Natural Science Sequence

Department of Biological Sciences, Building 478, Room 1200A; Telephone (805) 961-3511.
Department of Chemistry, Chemistry Building 1005; Telephone (805) 961-2931.
Department of Physics, Broida Hall 3019; Telephone (805) 961-3888.

The natural science sequence is a unified survey of important concepts in the natural sciences and their technical and social implications. The sequence is sponsored jointly by the Departments of Biological Sciences, Chemistry, and Physics.

The natural science courses should be taken in order: A before B, B before C. They are not open to students who have completed a college-level course in the biological or physical sciences; exceptions can be made with consent of the instructor and approval of the provost.

NATURAL SCIENCE COURSES

LOWER DIVISION

The courses are not open to students who have completed a college level course in the biological or physical sciences. Exceptions can be made with consent of the instructor and approval of the dean.

1A. Contemporary Natural Science — Physics
(4) Staff

Not open for degree credit for students who have completed Physics 10 or Physics 14. Lecture, 3 hours; discussion, 1 hour.

A modern description of matter from the scale of the universe to the scale of subatomic particles. The focus is on the concepts and ideas which man has devised to describe the order, simplicity, and beauty of nature at its most fundamental level and which form the basis of current scientific and technological disciplines. The course is basically descriptive, involving little use of mathematics, but some familiarity with high school algebra is useful. (F)

1B. Contemporary Natural Science — Chemistry
(4) Staff

Prerequisite: Natural Science 1A or Physics 10, or consent of instructor. Not open for degree credit to students who have completed Chemistry 25. Lecture, 3 hours; laboratory, 2 hours.

Introductory survey of basic chemical principles in the context of selected technological and environmental problems. Topics have included: atomic theory, states of matter, the mole in weight

relations and solutions, electronic structure of the atom, bonding in molecules, periodicity, the atmosphere and atmospheric pollution, rates of reaction and equilibrium, ionic equilibrium and pH, thermodynamics, energy production, and classes of organic compounds. Laboratory experiments demonstrate how analytical measurements can be made and include various chemical phenomena. (W)

1C. Contemporary Natural Science — Biology

(4) Gibor and Staff

Not open for credit toward graduation to students who have completed Biology 20 or Botany 20. Lecture, 4 hours.

Selected aspects of modern biology. Topics generally include cell structure, cellular chemistry, nutrition, population growth, birth control, basic genetics, evolution, and ecology. (S)

Philosophy

Department of Philosophy, South Hall 563 1; Telephone (805) 961-3122. Department Chair: Francis W. Dauer.

Faculty

Francis W. Dauer, Ph.D., Harvard University, Professor (*theory of knowledge, Hume, Wittgenstein, logic*)
Herbert Fingarette, Ph.D., UC Los Angeles, Professor (*philosophy of psychology, philosophy of law, Chinese philosophy*)
Noel Fleming, D. Phil., Oxford University, Professor (*philosophy of mind, history of philosophy, aesthetics*)
J. William Forgie, Ph.D., Cornell University, Associate Professor (*philosophy of religion, philosophy of language*)
Peter W. Hylton, Ph.D., Harvard University, Associate Professor (*contemporary philosophy, philosophy of language*)
Christopher McMahon, Ph.D., University of Pittsburgh, Assistant Professor (*ethics, social philosophy, value theory*)
Nathan Salmon, Ph.D., UC Los Angeles, Professor (*philosophy of language, metaphysics, logic*)
Hubert R. G. Schwyzer, Ph.D., UC Berkeley, Professor (*philosophy of language, metaphysics, Kant, contemporary philosophy*)
Alexander Sesonske, Ph.D., UC Los Angeles, Professor Emeritus
Charlotte Stough, Ph.D., UC Berkeley, Professor (*classical philosophy, history of philosophy*)
Burleigh T. Wilkins, Ph.D., Princeton University, Professor (*philosophy of history, political and legal philosophy*)

The major in philosophy, because it emphasizes and enhances analytical skills, is useful for the large number of careers that require general humanistic training at the undergraduate level. Four concentrations within the major accommodate the diversity of student needs and interests and the diversity of philosophy. (1) The core philosophy concentration is designed for students who seek thorough training in philosophy, either as a way of mastering a discipline at the undergraduate level or as preparation for graduate study. (2) The ethics and public policy concentration focuses on moral and legal problems confronting the community, and on the responsibilities of various professions. It is intended for a wide variety of students, including particularly those who plan careers in law (where early specialized training is discouraged), the public sector, or medicine (where it would be a useful adjunct). (3) The

theory and practice of analytical reasoning concentration stresses training in reasoning and analysis. It is a useful preparation for a variety of careers, such as business management, because analytical reasoning and conceptual analysis contribute to problem solving and decision making in most professions. This concentration has both a traditional philosophical component and an applied component. (4) The humanities concentration joins the study of philosophy with the investigation of ideas that are central to the humanities and is useful preparation for such arts and humanities careers as art criticism or reviewing. Students focus on the relation between philosophy and religion, art, film, and literature.

After completing specific prerequisites, students with a bachelor's degree in philosophy are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Undeclared students and liberal studies majors should consult with the external undergraduate adviser. There is an adviser for each of the four concentrations, as well as an internal undergraduate adviser who has final authority on such matters as waivers and exceptions. The "Information Sheet for Undergraduate Philosophy Majors" is available at the department office at all times; a list of courses to be offered each quarter, with specific descriptions and required texts, is available at registration time.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Philosophy

The philosophy major requires a total of 48 units, at least 36 of which must be upper-division, distributed in one of the following four concentrations. (The specific concentration selected will not be formally acknowledged on the student's official transcript or diploma.)

1. Core Philosophy Concentration

Preparation for the major. Philosophy 3 or 183. Philosophy 20A-B-C (when offered) is recommended, though not required. (Philosophy 183 applies to the 36 upper-division units required.)

Upper-division major. At least thirty-six upper-division units in philosophy, which must include:

- A. Two courses from Philosophy 100A-B-C-D-E
- B. One course from Philosophy 150A-B-C-D-E
- C. Four courses from the following two groups, with at least one from each group:
 - Group 1: Philosophy 151, 152, 153, 156
 - Group 2: Philosophy 160, 161, 162, 163, 164, 165, 166A, 166B
- D. Additional philosophy electives to make 36 upper-division units, and a total of 48 for the major.

Students preparing for graduate study are encouraged to supplement this program with additional courses in individual historical figures and/or courses from Philosophy 150A-E and 184.

2. Ethics and Public Policy Concentration

Preparation for the major. Philosophy 3 or 183, Philosophy 6 or 7. (Philosophy 183 applies to the 36 upper-division units required.)

Upper-division major. At least 36 upper-division units in philosophy, which must include:

- A. Philosophy 100A
- B. Philosophy 152 or 153
- C. One course from Philosophy 161, 165, 166A

- D. At least five courses from Philosophy 120, 121, 122, 125, 130, 150A, 180, 182, 188, 190, 191, 192, 193, 197P
- E. Additional philosophy electives to make 36 upper-division units and a total of 48 for the major.

3. Theory and Practice of Analytical Reasoning Concentration

Preparation for the major. Philosophy 3; Philosophy 6 or 7; and one course from the following: Computer Science 5AA-ZZ; Economics 1, 2, 5; Mathematics 30A; Psychology 1; or an alternate course relevant to analytical reasoning and approved by the undergraduate adviser.

Upper-division major. At least 36 upper-division units, up to eight of which may be taken from relevant courses in other departments with approval of the undergraduate adviser. The 36 units must include:

- A. Two courses from Philosophy 100A-B-C
- B. One course from Philosophy 120, 150A-B-C, 183, 192
- C. One course from Philosophy 152, 153, 160, 161, 162, 163, 164, 165, 166A, 166B
- D. Two courses from Philosophy 102A-B, 197R
- E. Additional electives to make 36 upper-division units and a total of 48 units for the major.

4. Humanities Concentration

Preparation for the major. One of the following complete sequences must be taken: Philosophy 20A-B-C or 21A-B-C, or History 4A-B-C, or Comparative Literature 30A-B-C. A sequence of three basic historical courses from another humanities department may be substituted, where appropriate to the student's course of study, with the approval of the undergraduate adviser.

Upper-division major. Thirty-six upper-division units, in addition to the 12 units taken in preparation for the major. Any given course may be used to satisfy several requirements simultaneously; however, the total course work must be so distributed as to satisfy the following requirements:

- A. Thirty-six units must be taken in philosophy, and at least 24 of these units must be upper-division.
- B. A total of 36 upper-division units must be taken in philosophy and, with the specific approval of the department undergraduate adviser, in the other departments of the humanities such as classics, history, religious studies, and departments which study art, literature, film, and music.
- C. If more than eight of the total 48 units for the major are taken in departments other than philosophy, the total course work must include a related philosophy course as determined by the undergraduate adviser. If, for example, 12 of the 48 units are in literature and the arts, the student will be expected to take a course in aesthetics or philosophy in literature.
- D. If Philosophy 20A-B-C or 21A-B-C was not taken in preparation for the major, four units from Group 1 and four units from Group 2 are required.
 - Group 1: Philosophy 152*, 153*
 - Group 2: Philosophy 125*, 160, 161, 162, 163, 164, 165, 166A, 166B, 167A-B*, 168*, 170*, 172*
- E. At least 24 units (6 courses) must be taken from a list comprised of the asterisked (*) courses in Groups 1 and 2 above, and Group 3 following.
 - Group 3: Philosophy 2, 32, 112, 115, 123A-B, 132, 136, 137, 142,

146A-B, 147, 175 (when appropriate as determined by the undergraduate adviser), 180, 182, 197H.

Senior Honors Program

In the last quarter of the junior year, or after 105 units toward graduation have been completed, students with a minimum overall grade-point average of 3.0 may be invited to participate in the senior honors program. Students in the program have an opportunity to do advanced work in a subject or area of special interest to them, leading to graduation with Distinction in the Major. Programs of advanced work will be individually designed, subject to the approval of the undergraduate affairs committee. For further information, contact the undergraduate adviser.

GRADUATE PROGRAM

Admission

In addition to the general requirements for admission to graduate status and for receipt of the M.A. and Ph.D. degrees, the applicant for admission to the Ph.D. program in philosophy should have completed an undergraduate philosophy major, or a sufficiently close equivalent in the judgment of the graduate admissions committee. Exceptions are occasionally made for outstanding students. A full description of the Ph.D. program, with current details of implementation, is available from the department office.

Master of Arts — Philosophy

The graduate program in philosophy is a Ph.D. program. Only in special circumstances will the department accept students whose aim is limited to earning the M.A. degree. However, provision is made within the Ph.D. program for awarding the M.A. degree when the student has demonstrated the requisite level of competence.

To be awarded the M.A. degree, the student must complete the course requirements listed under the Ph.D. program below, and either write an acceptable M.A. thesis or pass a comprehensive examination. Information about the thesis and examination options is available from the department graduate adviser.

Doctor of Philosophy — Philosophy

The requirement in logic. Prior to writing the qualifying paper, the student must successfully complete Philosophy 284G. Students may be exempted from this requirement by passing an examination, given only at the time of entrance into the Ph.D. program.

Course and seminar requirement. A total of 14 graduate courses and seminars must be taken for letter grades before the qualifying paper is attempted; undergraduate courses will not fulfill this requirement. Except as noted in (a) below, an independent study course (596) will not count toward this requirement unless special exception is made by both the graduate adviser and the department chair. Among the 14 courses and seminars, the following requirements must be met:

- A. History of Philosophy requirement. Three courses (not seminars), chosen from Philosophy 251G, 252G, 253G, 256G, 260G, 261G, 262G, 263G, 264G, 265G, 266A.
- B. An extended term paper, which builds on or is otherwise relevant to previous historical work, must be written for a seminar in the History of Philosophy (297A) or for an independent study course (596), chosen in consultation with the graduate adviser. Either of

these courses must be taken for a letter grade.

- C. Seminar requirement. Four seminars (not courses) must be taken for letter grades in addition to the seminar or 596 taken to satisfy the History of Philosophy requirement. Special Topics (594) may be included here.

Qualifying paper. This paper is to be original work and should present a philosophical thesis and defend it by argument. No faculty member or committee will be appointed to oversee its writing. The paper is read by all faculty members and is judged by whether or not it demonstrates the student's fitness to write a successful Ph.D. dissertation. A student whose qualifying paper is passed, and who has satisfied the Graduate Division requirements for the M.A., will be awarded the M.A. degree. Deadlines for the paper and other details of the requirement, such as the possibility of submitting a second paper if the first one is failed, are available from the department.

Oral examination. When the qualifying paper is accepted, an oral examination is required, success or failure in which will be the final determination of advancement to doctoral candidacy. Information about the nature and scheduling of the oral exam is available from the department.

Teaching. Students seeking the Ph.D. in philosophy are required to serve in a teaching role, at the level of teaching assistant or associate, during at least three terms of residence. Teaching assistants are required to enroll in Philosophy 500 and 501 during their three required terms, and in Philosophy 500 for any subsequent terms.

Dissertation. Satisfactory completion of a dissertation, including an oral defense, is required.

PHILOSOPHY COURSES

LOWER DIVISION

1. Short Introduction to Philosophy

(4) Staff
Not open for credit to students who have completed Philosophy 5.

Philosophical ideas in terms of which western civilization seeks to understand itself and the world of which it is a part. (F,W,S)

1HS. Honors Seminar

(4) Staff
Prerequisites: honors and freshman/sophomore standing.

Introduction to basic views, concepts and methods in philosophy emphasizing the readings of original texts and the writing of philosophical papers.

2. Introduction to Eastern Philosophies

(4) Staff
An introduction to three major traditions of Eastern philosophy: non-Buddhist Indian thought, Buddhist philosophy, and Chinese Confucianism and Taoism. The course will concentrate on the philosophical problems which arise within these traditions.

3. Critical Thinking

(4) Staff
Practical reasoning, argumentation, and the analysis of language as instruments of sound thinking in everyday life. (F,W,S)

4. Introduction to Ethics

(4) Staff
For nonmajors.
An examination, at an introductory level, of such ethical issues as: why be moral, moral relativism, the nature of virtues and vices; and possibly consideration of practical ethical problems such as abortion or war.

5. Ideas and Practice of Philosophy

(4) Staff
Not open for credit to students who have completed Philosophy 1. Enrollment limited to 20 lower-division students only.
An introduction to ways of thinking philosophically and to philosophical ideas. For the student who desires to emphasize reading in original texts and frequent oral and written discussion.

6. Business Ethics

(4) Staff
The course will study important ethical problems that arise in modern business practice in light of traditional theories in moral and political philosophy. Issues such as codes of conduct for business, preferential treatment of minorities, responsibility to the environment, and the morality of strikes by public service personnel will be studied in light of such theories as utilitarian and deontological moral theories, Classical, Liberalism, and Marxism.

7. Biomedical Ethics

(4) Staff
An examination of philosophical thinking about moral issues raised by the practice of medicine. Traditional ethical theories and problems will serve as background to, and in turn be illuminated by, such issues as informed consent, paternalism, abortion, euthanasia, and genetic engineering.

8. Contemporary Issues in Philosophical Perspective

(4) Stough, Fingarette
A philosophical examination of moral issues of current interest. Topics to be discussed will be announced in the departmental course description list available at department office.

12. Introduction to the Philosophy of Religion

(4) Forgie
An introduction to several traditional philosophical problems connected with religious belief.

20A-B-C. History of Philosophy

(4-4-4) Staff
A: From Thales to Aristotle. (F)
B: Medievalists to Rationalist (W)
C: Empiricists and Kant. (S)

21A-B-C. Philosophy and Western Civilization

(4-4-4) Staff
A multidisciplinary study which emphasizes philosophy as a formative agent and a reflection of the basic concerns and endeavors of western civilization from the classical age of Greece to the twentieth century.

25. Introduction to Ancient Philosophy

(4) Stough
This course is an introduction to western philosophy through a study of its origins in the speculative and critical thought of ancient Greek philosophers.

32. Introduction to Existentialism

(4) Fleming
A study of some existentialist writers such as Kierkegaard, Sartre, and Buber.

UPPER DIVISION

With the exception of Philosophy 124, 130, 180, 182, and 183, at least one prior course in philosophy or consent of instructor is required for upper-division courses. See course description for more specific prerequisites.

Philosophy 100A-100E

Prerequisite: upper-division standing, or one prior course in philosophy, or consent of instructor. (These courses do not form a sequence; each may be taken independently of the others.)

The course will examine the fundamental concepts, theories, and problems in the five major areas of western philosophy.

100A. Ethics

(4) Staff

100B. Theory of Knowledge

(4) Staff

100C. Philosophy of Language

(4) Staff

100D. Philosophy of Mind

(4) Staff

100E. Metaphysics

(4) Staff

102A-B. Applied Analytical Reasoning

(4-4) Dauer, Forgie
Prerequisite: Philosophy 3.
A: The development of skills in analyzing material drawn from a variety of philosophical and nonphilosophical concerns. Emphasis will be placed on disambiguating hidden ambiguities, making relevant distinctions, abstracting the central issues, and the analysis of increasingly complex arguments.

B: The study and application of specialized forms of reasoning such as legal reasoning, reasoning concerning means and ends, reasoning involved in problem-solving situations, and scientific and inductive reasoning.

103. Minds and Machines: Philosophical Issues in Computer Science

(4) Staff
Prerequisite: sophomore standing or higher. No previous work in computer science is necessary.

A study of the philosophical implications of the computer revolution, particularly artificial intelligence. Topics to be discussed include human and machine intelligence, thinking, perception, and consciousness. Includes computer laboratory work in artificial intelligence.

108. Philosophy of the Social Sciences

(4) Wilkins
Prerequisites: Philosophy 183 and two upper-division social science courses recommended.
Logical and methodological problems of the social sciences. Analysis of various claims that the social sciences have a necessarily unique methodological status amongst the sciences.

112. Philosophy of Religion

(4) Forgie
A study of some of the following topics: religious language, the existence and nature of God, the problem of evil, religious experience, religion and morality, the rationality of religious belief.

115. Religious Philosophers

(4) Fleming

May be repeated up to 12 units with consent of instructor.

A study of the work of religious thinkers such as Augustine, Pascal, and Kierkegaard. Sometimes only one writer, sometimes several writers, will be read.

118. Philosophy in the Nineteenth Century

(4) Staff

German idealism, romanticism, and the philosophical implications of nineteenth-century scientific developments.

119. American Philosophy

(4) Wilkins

American philosophy since 1800; idealism, naive realism, critical realism, pragmatism.

120. Advanced Topics in Biomedical Ethics

(4) Wilkins

For majors or nonmajors. May be repeated up to eight units with consent of instructor.

Topics will include: abortion, euthanasia, medical experimentation, genetic engineering, and debts to future generations.

121. Political Philosophy

(4) Wilkins

Prerequisite: one prior course in philosophy or upper-division standing in political science, or consent of instructor.

Analysis of fundamental political conceptions; the state, sovereignty, political obligation, natural rights, natural law, etc.

122. Theories of Justice

(4) Hylton

Prerequisite: at least one course in philosophy, or upper-division standing in political science, or consent of the instructor.

An examination, in detail, of one or more influential philosophical theories of justice.

123A-B. Classical Chinese Philosophy

(4-4) Fingarette

Prerequisites: two courses in philosophy and/or East Asian studies, or consent of instructor.

A study of selected classic texts of the period of the "philosophers" (approximately 500 to 200 B.C.). Primary emphasis on the *Analects* and the *Tao Te Ching*. (See detailed description of course available at department office.)

124. Philosophy of Science

(4) Wilkins

Prerequisite: at least one course in philosophy, or a good background in natural science.

Analysis of the interrelated functions of scientific theories, models, laws, experiments, and observational procedures in relation to the goals of explanation, prediction, control, and understanding. Problems of induction and the logic of confirmation.

125. Karl Marx's Philosophy of Man

(4) Wilkins

An examination of the moral and political writings of Karl Marx. Some attention will be given to his economics and his historical interpretations.

126. Social Philosophy

(4) Staff

Prerequisite: upper-division standing or at least one prior course in philosophy or consent of instructor.

This course will examine moral problems associated with economic activity: for example, economic justice and the moral basis of property rights.

127. Philosophy of History

(4) Wilkins

The course examines various philosophical theories of history.

130. Freedom and Determinism

(4) Wilkins

For nonmajors and majors.

This course concerns the problem of whether human action is free or determined and its implications for whether we are morally responsible for our acts. Readings in authors such as St. Augustine, Jonathan Edwards, Kant, William James, Marx, Freud, and Kenny.

132. Existentialism

(4) Fleming

Prerequisite: at least one prior course in philosophy or junior standing or consent of instructor. This course may be repeated up to eight units with consent of instructor.

A study of some existentialists' writings.

135. Contemporary Philosophy

(4) Staff

*Prerequisite: Philosophy 100B, 100D or 100E or consent of instructor. May be repeated up to 12 units, with consent of instructor.***136. Aesthetics**

(4) Fleming, Sesonke, Lloyd

Prerequisite: at least one prior course in philosophy, or junior standing, or consent of instructor.

Analysis of the aesthetic experience, the aesthetic object, the creative act, and art criticism.

137. Aesthetic Theory

(4) Schwyzer, Sesonke

A study of some major works in the philosophy of art from Plato to the present, with emphasis on the development and analysis of the basic concepts employed in criticism of the arts.

142. Advanced Topics in Philosophy of Religion

(4) Forgie

Prerequisite: Philosophy 112 or advanced standing in philosophy. May be repeated to a maximum of eight units with the consent of the instructor.

Advanced topics in the philosophy of religion. Specific subject matter is selected by the instructor and descriptions are available in the department office before each quarter.

146A. Philosophy in English and American Literature

(4) Fleming, Lloyd

Prerequisite: upper-division standing, or one prior course in philosophy, or consent of instructor. This course may be repeated up to eight units with consent of instructor.

This course will be concerned with an analysis of the expression of philosophical ideas in literature and the form and technique used in expressing such ideas. This course is limited to literary works written originally in English.

146B. Philosophy in World Literature

(4) Fleming, Lloyd

Prerequisite: upper-division standing, or one prior course in philosophy, or consent of instructor. This course may be repeated up to eight units with consent of instructor.

This course will be concerned with an analysis of the expression of philosophical ideas in literature and the form and technique used in expressing such ideas. The emphasis will be on literature written in non-English languages.

147. Philosophical Issues in Film

(4) Sesonke, Fleming

Prerequisite: at least one prior course in philosophy or junior standing or consent of instructor. This course may be repeated to a maximum of eight units with consent of instructor.

A study of philosophical issues expressed in film.

150A. Advanced Topics in Ethical Theory

(4) Staff

*Prerequisites: either 1) Philosophy 100A; or 2) two courses from Philosophy 100B-C-D-E, together with consent of instructor. This course may be repeated up to 12 units with consent of instructor.***150B. Advanced Topics in Theory of Knowledge**

(4) Dauer, Fleming

*Prerequisites: either 1) Philosophy 100B; or 2) two courses from Philosophy 100A-C-D-E, together with consent of instructor. This course may be repeated up to eight units with consent of instructor.***150C. Advanced Topics in Philosophy of Language**

(4) Hylton, Salmon

*Prerequisites: either 1) Philosophy 100C; or 2) two courses from Philosophy 100A-B-D-E, together with consent of instructor. This course may be repeated up to eight units with consent of instructor.***150D. Advanced Topics in Philosophy of Mind**

(4) Forgie, Schwyzer

*Prerequisites: either 1) Philosophy 100D; or 2) two courses from Philosophy 100A-B-C-E, together with consent of instructor. This course may be repeated up to eight units with consent of instructor.***150E. Advanced Topics in Metaphysics**

(4) Forgie, Salmon

*Prerequisites: either 1) Philosophy 100E; or 2) two courses from Philosophy 100A-B-C-D, together with consent of instructor. This course may be repeated up to eight units with consent of instructor.***151. Pre-Socratics**

(4) Stough

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***152. Plato**

(4) Stough

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***153. Aristotle**

(4) Stough

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***156. Hellenistic Philosophy**

(4) Stough

Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.

An examination of the thought of major Greek philosophers of the Hellenistic period

160. Descartes

(4) Schwyzer

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***161. Spinoza**

(4) Staff

Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.

162. Leibniz

(4) Staff

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***163. Locke**

(4) Fleming

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***164. Berkeley**

(4) Fleming

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***165. Hume**

(4) Fleming, Dauer

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***166A-B. Kant**

(4-4) Schwyzer, Hylton

*Prerequisites: Philosophy 100B, 100D, or 100E and one course from Philosophy 160-165, or consent of instructor.*An examination of the philosophy of Kant with special attention to the *Critique of Pure Reason*.**167A-B. Hegel**

(4-4) Staff

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***168. Nietzsche**

(4) Fleming

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***169. Phenomenology**

(4) Staff

Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.

An examination of the philosophies of Husserl and his disciples.

170. Wittgenstein

(4) Schwyzer, Forgie

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***172. Heidegger**

(4) Fleming

*Prerequisite: Philosophy 100B, 100D, or 100E or consent of instructor.***175. Other Philosophers**

(4) Staff

May be repeated up to 12 units with consent of instructor.

Course content will vary. Philosophers not taught in a regular course offering — such philosophers as Plotinus, Bacon, Hobbes, Pascal, Reid, Schopenhauer, Bradley — yet whose work is intrinsically important will be studied. Students may check with the department office for more detailed information before enrolling.

180. Philosophical Psychology

(4) Fingarette, Fleming

Prerequisite: consent of instructor. May be repeated up to eight units.

An examination of some of the concepts of the mind, such as those of desire, intention, action, perception, sensation, and the unconscious.

182. Concepts of Psychoanalysis

(4) Fingarette

Prerequisite: consent of instructor.

Lectures, reading, and case study critiques from Freud and contemporary psychoanalysis; an introduction to the principal conceptions for the student of philosophy and of the arts and humanities in general.

183. Beginning Modern Logic

(4) Hylton, Salmon

Prerequisite: None, except students who have had difficulties with formal material are recommended to take Philosophy 3 prior to this course.

An introduction to the concepts and methods of modern symbolic logic. Emphasis is placed on problems of translating English expressions into logical symbols and on the development of skills in using the formal proof procedures of sentential and predicate logic.

184. Intermediate Modern Logic

(4) Hylton, Salmon

Prerequisite: Philosophy 183 or equivalent, or consent of instructor.

Further application and development of the predicate calculus, including the calculi of identity and description. An introduction to the metalogical questions of completeness, consistency, and decidability.

185. Advanced Modern Logic

(4) Hylton, Salmon

Prerequisites: Philosophy 184 or equivalent; or Mathematics 109A, or consent of instructor.

Topics from the theory of formal systems, set theory, recursive function theory, and automata theory.

186. Philosophical Logic

(4) Salmon

Prerequisites: Philosophy 183 and 184, or equivalent, or consent of instructor. May be repeated once for credit.

Topics in logical theory, the philosophy of logic and language, intensional or other deviant logics, such as modal logic or tense logic.

187. Philosophy of Mathematics

(4) Staff

Prerequisite: Philosophy 183 or equivalent, or consent of instructor.

Logistic, formalist, and intuitionist views of the nature of mathematics. Epistemological problems of applied mathematics.

188. Theory of Value

(4) Wilkins

190. History of Ethical Theory

(4) Staff

Prerequisite: Philosophy 100A or equivalent. Course may be repeated up to 12 units with consent of instructor.

A close study of the works of a philosopher or a movement that has been central to the tradition of ethics. Possible topics are: Greek ethics; Aristotle; British moralists; Kant; the utilitarians and their critics; twentieth-century analytic moral philosophy. Specific topic will be in course description available at department office each quarter.

191. Ethical Issues in Legal Policy

(4) Fingarette

Prerequisite: upper-division status.

Contemporary legal policy issues that raise ethical issues. Topics will include: how to reconcile civil liberties and public safety in dealing with dangerous persons; plea bargaining; mental disability defenses; affirmative action and "reverse discrimination."

192. Philosophy of Law

(4) Fingarette

Prerequisites: Philosophy 3 and either Philosophy 4 or Philosophy 100A or consent of instructor.

An introduction to some of the main issues generated by the philosophical question, "What is

law?" 1. In what sense is conduct made obligatory by the existence of law? 2. What, if any, is the relationship between law and morals? 3. What are rules? What does it mean to say that a rule exists? Do courts really apply rules or merely pretend to do so?

193. Punishment and Responsibility

(4) Fingarette, Wilkins

Prerequisites: two prior philosophy courses required, one of which must be from the following: Philosophy 4, 100A, 121, 122, 150A. An examination of some of the philosophical problems of punishment and responsibility: the rationale of punishment and the legal doctrine of *mens rea*; the analysis of conditions of responsibility, relations between punishment, responsibility, retribution, guilt, shame, etc.**194. Group Studies in Philosophy**

(4) Staff

*Prerequisites: upper-division standing in philosophy and consent of instructor. Enrollment normally limited to 12 or fewer students. Course may be repeated for credit up to eight units with consent of instructor.***195. Advanced Seminar in Classical Philosophy**

(4) Stough

Prerequisites: at least two upper-division courses in philosophy. Admission by interview with instructor only. May be repeated to a maximum of 12 units.

Intensive reading and discussion of the texts of individual Greek philosophers. Specifics will be available in departmental course list.

196. Senior Honors Seminar

(4) Staff

Prerequisite: Enrollment limited to senior philosophy majors, by invitation of instructor. A discussion course centered around a single topic or problem to be announced in advance by the instructor. (F)**197A-B. Senior Honors Thesis**

(2-2) Staff

Prerequisites: enrollment limited to senior philosophy majors, by consent of instructor and departmental approval.

A research and writing tutorial designed for senior honors majors. The first term will be spent mainly in selecting and researching a topic for the thesis. The second term will be spent mainly in the writing of the thesis. (W,S)

197H. Senior Project for Majors with Humanities Emphasis

(2-4) Staff

Prerequisites: upper-division standing in philosophy and consent of the undergraduate adviser. May be repeated up to eight units with consent of instructor.

A research and writing tutorial in the area of the humanities upon which the student has concentrated. A written proposal of the project must be approved by the undergraduate adviser and the instructor.

197P. Senior Project for Majors with Ethics and Public Policy Emphasis

(2-4) Staff

Prerequisites: upper-division standing in philosophy and consent of the undergraduate adviser. May be repeated up to eight units with consent of instructor.

A research and writing tutorial in some topic relevant to issues in ethics and public policy. A written proposal of the project must be approved by the undergraduate adviser and the instructor.

197R. Senior Project for Majors with Theory and Practice of Analytical Reasoning Emphasis

(2-4) Staff

Prerequisites: upper-division standing in philosophy and consent of the undergraduate adviser. May be repeated up to eight units with consent of instructor.

A research and writing tutorial in the application of analytical reasoning to some practical concern or enterprise. A written proposal of the project must be approved by the undergraduate adviser and the instructor. The project should ideally be based on some work experience or internship.

199. Independent Studies in Philosophy

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in philosophy. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Instructor approval required.

A written statement of the proposed program of study must be presented to the instructor for his or her approval before the student signs up for the course. (F,W,S)

GRADUATE COURSES

Graduate standing is prerequisite for all graduate courses.

All graduate seminars (with the exception of Philosophy 200) may be repeated with consent of the instructor, and may be taken for one to four units of credit as determined by consultation with the instructor. Specific topics for seminars will be available at the department office at the time registration counseling begins.

200. First-Year Graduate Seminar

(4) Staff

Prerequisite: enrollment limited to first-year graduate students.

The course is designed to introduce new graduate students to graduate-level work. Topics will depend on the interests of the students and the instructor.

208G. Philosophy of the Social Sciences

(1-4) Wilkins

212G. Philosophy of Religion

(1-4) Forgie

215G. Religious Philosophers

(1-4) Fleming

218G. Philosophy in the Nineteenth Century

(1-4) Wilkins

219G. American Philosophy

(1-4) Wilkins

220G. Topics in Biomedical Ethics

(1-4) Wilkins

221G. Political Philosophy

(1-4) Wilkins

222G. Theories of Justice

(1-4) Hylton

A study at the graduate level of an examination, in detail, of one or more influential philosophical theories of justice.

223A-B. Classical Chinese Philosophy

(1-4) Fingarette

224G. Philosophy of Science

(1-4) Wilkins

225G. Karl Marx's Philosophy of Man

(1-4) Wilkins

226G. Social Philosophy

(1-4) Staff

A study at the graduate level of moral problems associated with economic activity, for example, economic justice and the moral basis of property rights.

227G. Philosophy of History

(1-4) Wilkins

230G. Freedom and Determinism

(1-4) Wilkins

232G. Existentialism

(1-4) Fleming

235G. Contemporary Philosophy

(1-4) Staff

236G. Aesthetics

(1-4) Fleming, Sesonske

A study at the graduate level of the aesthetic experience, the aesthetic object, the creative act, and art criticism.

237G. Aesthetic Theory

(1-4) Schwyzer

A study at the graduate level of the development and analysis of the basic concepts employed in criticism of the arts.

242G. Topics in the Philosophy of Religion

(1-4) Forgie

246A. Philosophy in English and American Literature

(1-4) Fleming

A study at the graduate level of the expression of philosophical ideas in literature, and the form and technique used in expressing such ideas. This course is limited to literary works written originally in English.

246B. Philosophy in World Literature

(1-4) Fleming

A study at the graduate level of the expression of philosophical ideas in literature, and the form and technique used in expressing such ideas. The emphasis will be on literature in non-English languages.

247G. Philosophical Issues in Film

(1-4) Staff

250A. Topics in Ethical Theory

(1-4) Staff

250B. Topics in Theory of Knowledge

(1-4) Dauer, Fleming

250C. Topics in Philosophy of Language

(1-4) Hylton, Salmon

250D. Topics in Philosophy of Mind

(1-4) Forgie, Schwyzer

250E. Topics in Metaphysics

(1-4) Forgie, Salmon

251G. Pre-Socratics

(1-4) Stough

252G. Plato

(1-4) Stough

253G. Aristotle

(1-4) Stough

256G. Hellenistic Philosophy

(1-4) Stough

260G. Descartes

(1-4) Schwyzer

261G. Spinoza

(1-4) Staff

262G. Leibniz

(1-4) Staff

263G. Locke

(1-4) Fleming

264G. Berkeley

(1-4) Fleming, Dauer

265G. Hume

(1-4) Dauer, Fleming

266A-B. Kant

(1-4) Schwyzer, Hylton

268G. Nietzsche

(1-4) Fleming

269G. Phenomenology

(1-4) Staff

An examination of the philosophies of Husserl and his disciples at the graduate level.

270G. Wittgenstein

(1-4) Schwyzer, Forgie

272G. Heidegger

(1-4) Fleming

275G. Other Philosophers

(1-4) Staff

Course content will vary. Philosophers not taught in a regular course or seminar, whose work is considered important, will be studied at the graduate level.

280G. Philosophical Psychology

(1-4) Fingarette, Fleming

282G. Concepts of Psychoanalysis

(1-4) Fingarette

A study at the graduate level of selected writings of Freud and contemporary psychoanalysis.

283G. Symbolic Logic

(1-4) Hylton, Salmon

284G. Advanced Symbolic Logic

(1-4) Hylton, Salmon

285G. Mathematical Logic

(1-4) Hylton, Salmon

286G. Philosophical Logic

(1-4) Salmon

Prerequisites: Philosophy 183 and 184, or equivalent, or consent of instructor. Although the number of lecture hours per week is fixed, in some quarters the course requirements may be adjusted for fewer than four units by arrangement with the instructor.

Topics in logical theory, the philosophy of logic and language, intensional or other deviant logics, such as modal logic or tense logic.

287G. Philosophy of Mathematics

(1-4) Dauer

288G. Theory of Value

(1-4) Wilkins

290G. History of Ethical Theory

(1-4) Staff

A close study at the graduate level of the works of some philosophers or some movements that have been central to the tradition of ethics.

291G. Ethical Issues in Legal Policy
(1-4) Fingarette

292G. Philosophy of Law
(1-4) Fingarette

293G. Punishment and Responsibility
(1-4) Fingarette
A study at the graduate level of selected problems in the practice of punishment and determination of responsibility.

295G. Topics in Classical Philosophy
(1-4) Stough

296A. Seminar in Ethics
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

296B. Seminar in Epistemology
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

296C. Seminar in the Philosophy of Language
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

296D. Seminar in the Philosophy of Mind
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

296E. Seminar in Metaphysics
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

297A. Seminar in the History of Philosophy
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

297B. Seminar on Contemporary Figures in Philosophy
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

298A. Seminar in Aesthetics
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

298B. Seminar on Problems in Legal and Political Philosophy
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

299A. Seminar in the Philosophy of Logic
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

299B. Seminar in the Philosophy of Mathematics
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

299C. Seminar in the Philosophy of Science
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

299D. Seminar in the Philosophy of the Social Sciences
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

299E. Seminar in the Philosophy of History
(1-4) Staff
Prerequisite: graduate standing or consent of instructor.

500. Apprentice Teaching in Philosophy
(2-4) Staff
Prerequisite: teaching assistantship in philosophy. No unit credit allowed toward degree.

A teaching practicum involving the study and development of effective teaching techniques in philosophy. Each student will be responsible for and teach a class section in an undergraduate course in philosophy. One meeting per week with instructor and one or more discussion section meetings, and attendance in the lecture of the assigned course are required.

501. Teaching Assistant Training
(2) Staff
Prerequisite: teaching assistant in philosophy. No unit credit allowed toward degree.

Instructional training. Orientation in professional conduct and responsibilities; observation of student's teaching (in the form of faculty visits or videotaping) and follow-up conferences; discussion of teaching evaluations and workshops on pedagogical problems.

505. Philosophical English for Foreign Students
(1-6) Staff
Prerequisites: foreign graduate student in philosophy. Either (a) passing English Language Placement Examination at a level where English as a Second Language classes are not required; or (b) successful completion of ESL required classes; or (c) concurrent enrollment in required ESL classes.

This course is designed to familiarize foreign graduate students with the style and terminology of the English language as used in philosophical classics and contemporary journal articles and to write papers on them. The course will have a philosophical as well as a language training component.

594. Special Topics
(1-4) Staff
Prerequisite: consent of instructor.
Special seminar on research subjects of current interest.

596. Directed Reading and Research
(1-12) Staff
Prerequisites: graduate student in philosophy; consent of instructor.

A written proposal must be approved by the instructor and the department chair.

597. Individual Study for Master's and/or Ph.D. Examinations for Advancement to Candidacy
(1-12) Staff
No unit credit allowed toward degree.
Individual preparation for the doctoral qualifying examination.

598. Master's Thesis Research and Preparation
(1-12) Staff
No unit credit allowed toward degree.
This course is reserved for research and writing of the master's thesis.

599. Ph.D. Dissertation Research and Preparation
(1-12) Staff

Physical Activities

Department of Physical Activities, Robertson Gymnasium 1001; Telephone (805) 961-2181. Jon Spaventa, Director, Physical Activities and Recreation.

Faculty
Arthur J. Aldritt, M.A., UC Berkeley, Supervisor
Newell D. Breyfogle, M.A., University of Iowa, Supervisor
Arthur J. Gallon, Ed.D., UC Berkeley, Supervisor Emeritus
Willard M. Hammer, Ed.D., University of Oregon, Supervisor Emeritus
Mayville S. Kelliher, Ed.D., University of Oregon, Supervisor Emeritus
F. Patricia Stock, M.S., University of Oregon, Supervisor
Wilton M. Wilton, Ed.D., UC Los Angeles, Supervisor Emeritus

The Department of Physical Activities offers courses designed to contribute to the development and maintenance of physical fitness, courses designed to develop recreational skills, and professional courses leading to the Athletic Coaching Program Certification. Physical activities courses are offered at the elementary, intermediate, and advanced levels and may be taken only once for credit. Courses in the "1-" series with the "Intercollegiate" designation in the title may be repeated up to 12 times for a total of six units, on a passed/not passed basis only. No more than six units of "1-" courses may be counted toward degree requirements.

A physical examination performed by a private physician is recommended for any student intending to enroll in physical activities courses.

Fines are imposed by the department for failure to return equipment or clothing on or before the date posted for such return at the end of each quarter, and for failure to close out lockers at the end of each quarter.

PROGRAM IN ATHLETIC COACHING

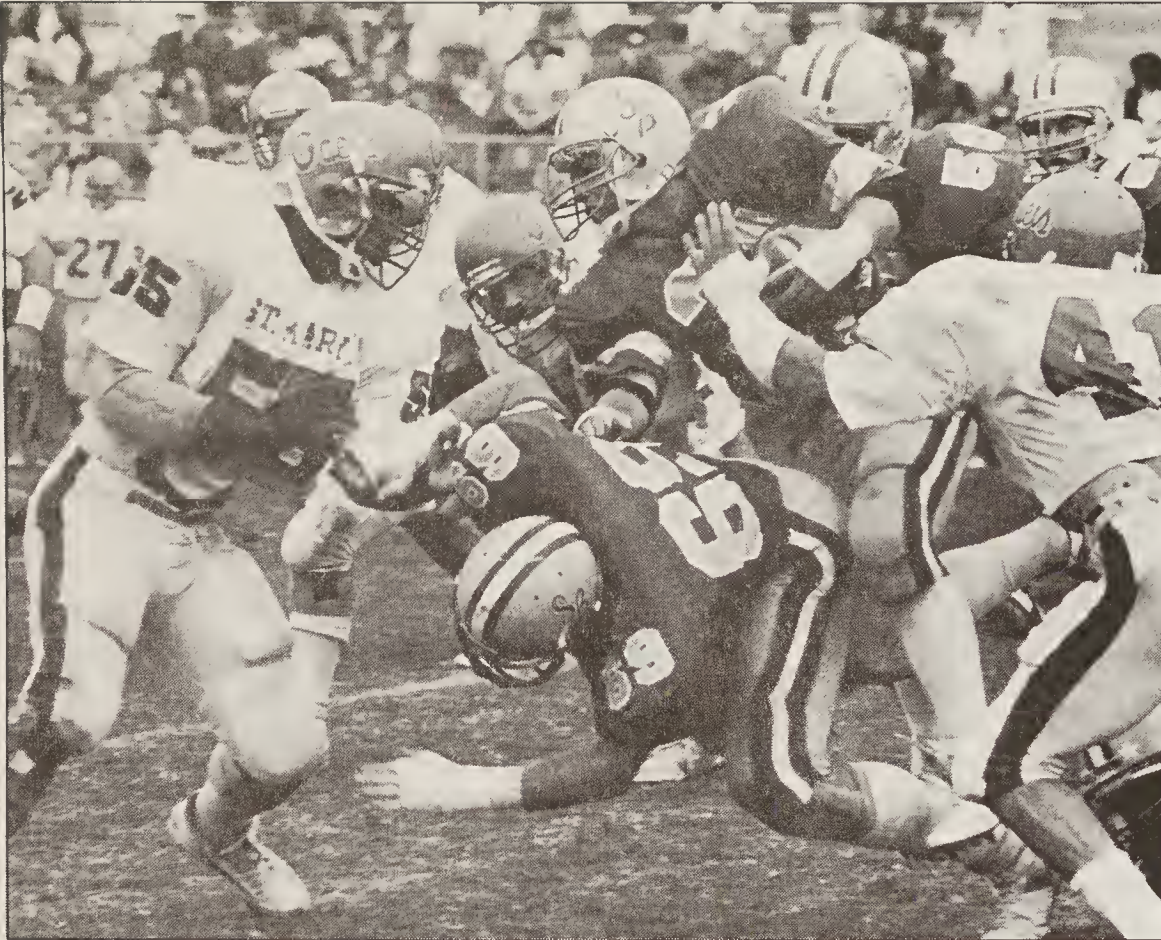
The Department of Physical Activities offers the 30-unit Certification Program in Athletic Coaching. The program is primarily designed for those interested in coaching at the secondary or college levels, but is also appropriate for coaching youth sports.

Students who wish to enroll in the program must consult with the coaching adviser. Specific details concerning State of California and University of California requirements for the teaching credential are available from the credential adviser in the Graduate School of Education.

The basic core requirement consists of 21-24 units. Remaining units are selected from physical activities offerings, with direction from the adviser.

Preparation for Athletic Coaching Program. A course in psychology and a course in communication are recommended.

Required core courses. Physical Activities 5A, 130A, 130C, 149, 150, 170 series (two courses), 180 and/or 392. Students should consult with the coaching adviser about elective courses.



In 1986, intercollegiate football returned to UCSB after a 15-year absence. Under the coaching of former Gaucho player Mike Warren, UCSB's Division III team posted a 4-5 season with four of its nine games pitting the team against Division II adversaries.

PHYSICAL ACTIVITIES COURSES

LOWER DIVISION

The physical activities listed below are designed to provide a basic program by which students may improve their physical condition, secure useful neuro-muscular development, and gain recreational skills.

Classes meet two periods weekly and provide instruction and supervised practice in the fundamentals of each activity.

Prerequisites: for all A-B-C courses, A is prerequisite to B, and B is prerequisite to C; or consent of instructor (exceptions: 1-8A-B-C, 1-29A-B-C, 1-43A-B-C).

Courses with a \$ prefix have a special fee charged for use of equipment and facilities not owned by the university. Direct payment will be made by the student.

1-2. Intercollegiate Baseball (1/2)

Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-3A-B-C. Archery (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-4A-B-C. Badminton (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-5A-B-C. Baseball (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-6A-B-C. Basketball (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

\$ 1-7A-B-C. Boating and Sailing (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-8A-B-C. Body Toning and Conditioning (1/2-1/2-1/2)

\$ 1-9A-B-C. Bowling (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-11. Intercollegiate Basketball (1/2)

Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-12. Basic Cycling (1/2)

This course is designed to give the student a basic understanding of the principles of cycling, including pedal cadence, shifting, gear ratios, training, safety, and maintenance.

\$ 1-13A-B-C. Fencing (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-14. Intercollegiate Cross Country (1/2)

Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-15. Intercollegiate Football (1/2)

Prerequisite: consent of coach. May be repeated to a maximum of six units.

The course provides students the opportunity to compete, improve their physical condition, and refine their skills through vigorous training and neuromuscular development.

1-16A-B-C. Folk Dance (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

\$ 1-18D. Theatrical Fencing (1/2)

A course designed for drama majors which covers the use of sabre, epee, and dagger in theatrical productions. Proficiency in the class does not prepare the individual for contest participation but rather the use of these instruments in acting.

1-20. Field Hockey (1/2)

1-21. Team Handball (1/2)

This course introduces fundamental skills and techniques enabling students to master the art of movement, jumping, and controlling the ball, while becoming acquainted with the rules of team handball.

1-22. Intercollegiate Golf (1/2)

Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-23. Intercollegiate Gymnastics (1/2)

Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-24A-B-C. Golf (1/2-1/2-1/2)

A: Elementary.
B: Intermediate.
C: Advanced.

1-25A-B-C. Tumbling and Free Exercise (1/2-1/2-1/2)

Affords a basic background for the sport of gymnastics with a working knowledge of tumbling skills progressing from basic mat somersaults, kips, balances, etc., to intermediate and advanced routines as used in both the men's and women's competitive tumbling and free exercise events.

A: Elementary.
B: Intermediate.
C: Advanced.

1-26A-B-C. Gymnastics Apparatus (1/2-1/2-1/2)

Offers basic, intermediate, and advanced instruction for both men and women in all olympic events except for exercise. Step by step progressions leading to competitive style routines are taught for each of the three ability levels.

A: Elementary.
B: Intermediate.
C: Advanced.

1-28. Elementary Orienteering (1/2)

Orienteering involves navigating cross-country over unfamiliar terrain with a map and compass in order to locate control markers in a competitive race that requires speed, accuracy on the part of

the competitor. Map reading and compass proficiency taught.

1-29A-B-C. Exercise and Figure Control
 (1/2-1/2-1/2)

1-30A-B-C. Soccer
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-31A-B-C. Softball
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced

1-32. Intercollegiate Softball
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-33. Intercollegiate Swimming
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-34A-B-C. Swimming
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-35A-B-C. Synchronized Swimming
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-36. Jogging Fitness
 (1/2)
 (a) Jogging (majority of work), (b) stair running, (c) indoor and outdoor apparatus, (d) information on various methods of obtaining cardiovascular fitness: long slow distance, interval training, and repetition training.

1-37. Intercollegiate Tennis
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

\$ 1-38A-B-C. Tennis
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-39A-B-C. Track and Field
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-40A-B-C. Volleyball
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-41A-B-C. Water Polo
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-42. Intercollegiate Track and Field
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-43A-B-C. Weight Training
 (1/2-1/2-1/2)

1-43D. Intercollegiate Weight Training
 (1/2)
Prerequisite: consent of instructor. May be repeated to a maximum of six units.

1-44A-B-C. Wrestling
 (1/2-1/2-1/2)
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-45. Intercollegiate Water Polo
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-47. Intercollegiate Volleyball
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-48. Intercollegiate Soccer
 (1/2)
Prerequisite: consent of coach. May be repeated to a maximum of six units.

1-49A-B-C. Springboard Diving
 (1/2-1/2-1/2)
Prerequisites: consent of instructor is prerequisite to Physical Activities 1-49A; Physical Activities 1-49A, or equivalent, and instructor's approval is prerequisite to 1-49B; Physical Activities 1-49B, or equivalent, and instructor's approval is prerequisite to 1-49C.
 A: Elementary.
 B: Intermediate.
 C: Advanced.

1-57. Touch Rugby
 (1/2)

UPPER DIVISION

1-99. Lifetime Activities Interest Class
 (1/2)
Prerequisite: consent of instructor. Enrollment not to exceed two sections of 1-99 per quarter. May be repeated to maximum of six units.
 This class makes it possible for a student to take instruction beyond the elementary, intermediate, and advanced levels of any Physical Activities 1-class.

ADVANCED PHYSICAL ACTIVITIES COURSES

LOWER DIVISION

3. Nutrition, Health, and Fitness
 (3) Staff
 This course examines the interdependent relationships between nutrition, health, and fitness. An understanding of nutrition, food selection, proper diet, and lifetime health habits is emphasized.

4A-B-C. Life Fitness
 (1.5-1.5-1.5) Staff
 A course designed toward attaining physical fitness through an understanding and participation in an effective program of physical activities which can be continued throughout life. Stress will be placed on activities that contribute toward total health.

\$ 5A. First Aid and Cardiopulmonary Resuscitation
 (3) Breyfogle, Horodowich, Staff
Required for a coaching certificate.
 The course develops the knowledge for prevention and the skills necessary for administering immediate care to victims of accidents or sudden illness occurring in home and outdoor environments. Also cardiopulmonary resuscitation and personal safety are emphasized. Successful completion may lead to standard first aid and personal safety and CPR certification.

6A-B. Personal Defense
 (1.5-1.5) Staff
Prerequisite: Physical Activities 6A is prerequisite to 6B.
 A course designed primarily for but not limited to women. Emphasis will be placed on self defense techniques, skills, and "rules of avoidance and safety."

7. Ropes Course: Theory and Practice
 (2) Staff
 This course will provide the student with the opportunity to learn the philosophical basis for ropes course utilization. The student will physically participate in all aspects of the ropes course in order to relate the theoretical to the practical.

30A-B-C. Appreciation of Sports
 (2-2-2) Stock
 Lecture, demonstrations, and selected learning experiences for the general university student leading to an understanding and appreciation of athletics and recreational sports.

32A. Principles of Officiating
 (2) Staff
 The principles, standards, techniques, and rules for officiating team and individual sports popular in the fall.

32B. Principles of Officiating
 (2) Staff
 The principles, standards, techniques, and rules for officiating team and individual sports popular in the winter.

32C. Principles of Officiating
 (2) Staff
 Principles, rules, and techniques of officiating volleyball and basketball for women. Successful completion of the course can lead to women's volleyball and basketball certification.

32D. Principles of Officiating
 (2) Staff
 The principles, standards, techniques, and rules for officiating team and individual sports popular in the spring and summer.

32E. Principles of Officiating
 (2) Staff
 The course focuses on the principles, rules, and techniques of officiating CIF basketball and intramural sports. Successful completion may lead to certification in officiating of intramural sports and prepare students for basketball certification by the California Interscholastic Federation.

48. Lifesaving
 (1) Staff
 Successful completion of the course may lead to the American Red Cross Senior Lifesaving Certificate.

49. Water Safety Instruction
 (2.5) Staff
Prerequisite: Physical Activities 48 or current American Red Cross senior lifesaving certificate.
 This course includes analysis and performance of swimming skills related to personal and small

craft safety, plus theory and application of methods for organizing and presenting aquatic materials. Satisfactory completion of the course may lead to American Red Cross Water Safety Instructor's Certificate.

UPPER DIVISION

101. Methods of Conditioning in Athletics

(3) Staff

Prerequisite: upper-division standing or consent of instructor. Coaching certification candidacy recommended.

A course designed to present current methods and concepts of athletic training and conditioning. Emphasis is placed on fitness training programs, conditioning, and progressive weight training specific to sports. Basic concepts for training, conditioning, diet, and nutrition in athletics are examined.

130A. Foundations of Athletics — Problems Related to Athletics Administration

(4) Stock, Staff

Prerequisite: upper-division standing or consent of instructor. Required for a coaching certification.

An introduction to basic problems of management, administration, and organization of interscholastic athletic programs. Particular emphasis is placed on programs as conducted under the jurisdiction of the California Interscholastic Federation.

130C. Foundations of Athletics — Problems Related to Sports Psychology

(4) Spaventa

Prerequisite: upper-division standing or consent of instructor. Required for a coaching certification.

The application of data from psychological and related fields as it specifically applies to athletics, coaches, and sports activities. Principles and problems of coaching are examined. Human factors of performance, personality, motivation, learning, and stress are presented.

130D. Foundations of Athletics — Problems Related to Sports and Society

(4) Staff

Prerequisites: upper-division standing or consent of instructor. Required for a coaching certification.

A course designed to explore the problems relative to sports and society as they affect interscholastic participation and coaching.

136. Movement Education in the Elementary School

(3) Spaventa

Prerequisite: upper-division standing or consent of instructor.

An analysis and study of the principles and practices of movement education with emphasis on the development of basic movement skills, sport skills, and games. The course also includes examination and construction of curriculum for grades K-6.

149. Composite Sciences for Athletic Coaching

(4) Romeo

Prerequisites: coaching certification program and consent of instructor.

An overview of the essential scientific disciplines, human anatomy, kinesiology, motor learning, physiology, and mechanical analysis as they apply to athletic coaching. The course is specifically designed for students desiring to coach athletic teams, but who lack a scientific background related to human motion.

150. Medical Aspects of Athletics

(3) Romeo

Prerequisites: Physical Activities 149, upper-division standing, or consent of instructor.

Required for a coaching certification.

An introduction to the basic concepts and techniques in the prevention, diagnosis, treatment, and rehabilitation of athletic injuries. The practical application for prevention and the therapeutic measures relative to sports activities are examined.

170A-M. Techniques and Advanced Analysis of Team Sports

Prerequisites: upper-division standing, related physical activity course, or consent of instructor.

The technique of teaching individual and team skills of a variety of team sports and advanced analysis of that sport which is essential to a coach of competitive teams at the interscholastic and college level.

170A. Football

(3) Staff

170B. Basketball

(3) Staff

170C. Baseball

(3) Staff

170D. Track and Field

(3) Staff

170E. Water Polo

(3) Staff

170F. Swimming and Diving

(3) Staff

170G. Soccer

(3) Staff

170H. Gymnastics

(3) Staff

170I. Volleyball

(3) Staff

170J. Softball

(3) Staff

170K. Wrestling

(3) Staff

170L. Racquet Sports

(2) Staff

170M. Golf

(2) Staff

180. Practicum in Physical Activities

(3) Aldritt

Prerequisites: registered coaching certification candidate, senior standing, or consent of instructor.

Actual experience in the conduct of activity classes, or athletic teams, under the supervision of an experienced instructor or coach.

199. Independent Studies in Physical Activities

(1-5) Stock

Prerequisites: upper-division standing. Consent of instructor. Open only to advanced students approved by the coaching certification adviser and faculty members involved. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in physical activities. Students are limited to five units per

quarter and 30 units total in all 198/199 courses combined.

This course provides an opportunity for students in physical activities to pursue a particular area of interest under the guidance of an expert in the field.

GRADUATE COURSE

392. Student Teaching — Coaching

(3-9) Aldritt

Prerequisite: graduate standing or consent of instructor.

A course designed to satisfy the California teaching credential. Available to students accepted in the Graduate School of Education.

Physics

Department of Physics, Broida Hall 3019; Telephone (805) 961-3888. Department Chair: José R. Fulco.

Faculty

Gunter Ahlers, Ph.D., UC Berkeley, Professor (*statistical mechanics — experimental*)

Paul H. Barrett, Ph.D., UC Berkeley, Professor Emeritus

David O. Caldwell, Ph.D., University of California, Los Angeles, Professor (*high energy physics — experimental*)

David S. Cannell, Ph.D., Massachusetts Institute of Technology, Professor (*statistical physics — experimental*)

John L. Cardy, Ph.D., Cambridge University, Professor (*particle physics — theoretical*)

Douglas Eardley, Ph.D., UC Berkeley, Professor (*relativistic astrophysics*)

Robert Eisberg, Ph.D., UC Berkeley, Professor (*particle physics — experimental, physics education*)

Luis Elias, Ph.D., University of Wisconsin, Professor (*condensed matter*)

Virgil Elings, Ph.D., Massachusetts Institute of Technology, Professor (*biomedical physics — experimental*)

José R. Fulco, Ph.D., University of Buenos Aires, Professor (*particle physics — theoretical*)

Paul K. Hansma, Ph.D., UC Berkeley, Professor (*electron tunneling — experimental*)

James B. Hartle, Ph.D., California Institute of Technology, Professor (*relativistic astrophysics — theoretical*)

Alan J. Heeger, Ph.D., UC Berkeley, Professor (*condensed matter physics — experimental*)

Daniel W. Hone, Ph.D., University of Illinois, Professor (*condensed matter physics — theoretical*)

Gary Horowitz, Ph.D., University of Chicago, Associate Professor (*general relativity*)

Vincent Jaccarino, Ph.D., Massachusetts Institute of Technology, Professor (*condensed matter physics — experimental*)

Walter Kohn, Ph.D., Harvard University, Professor (*condensed matter physics — theoretical*)

James S. Langer, Ph.D., University of Birmingham, Professor (*condensed matter physics — theoretical*)

Harold W. Lewis, Ph.D., Harvard University, Professor (*nuclear reactor safety — theoretical*)

Philip M. Lubin, Ph.D., UC Berkeley, Assistant Professor (*particle physics — theoretical*)

Rollin J. Morrison, Ph.D., University of Illinois, Professor (*high energy physics — experimental*)

Stanton J. Peale, Ph.D., Cornell University, Professor (*astrophysics — theoretical*)

Raymond F. Sawyer, Ph.D., Harvard University, Professor (*particle physics — theoretical*)

Douglas J. Scalapino, Ph.D., Stanford University, Professor (*condensed matter physics — theoretical*)

Glen E. Schrank, Ph.D., UC Los Angeles, Associate Professor (*particle physics — theoretical*)

Robert Schrieffer, Ph.D., University of Illinois, Professor, holder of Essam Khashoggi Chair (*condensed matter physics — theoretical*)

Mark Srednicki, Ph.D., Stanford University, Associate Professor (*particle physics — theoretical*)

Andrew E. Strominger, Ph.D., Massachusetts Institute of Technology, Assistant Professor (*particle physics — theoretical*)

Robert L. Sugar, Ph.D., Princeton University, Professor (*particle physics — theoretical*)

William C. Walker, Ph.D., University of Southern California, Professor (*condensed matter — experimental*)

Frank Wilczek, Ph.D., Princeton University, Professor, holder of Chancellor's Chair (*particle physics — theoretical*)

Michael S. Witherell, Ph.D., University of Wisconsin, Professor (*high energy physics — experimental*)

Fred Wudl, Ph.D., UC Los Angeles, Professor (*materials science — experimental*)

Anthony Zee, Ph.D., Harvard University, Professor (*particle physics — theoretical*)

The physics major provides the foundations for careers in basic and applied physics; in interdisciplinary areas such as astronomy, biophysics, environmental science, oceanography, and scientific instrumentation; and in economics, law, and medicine.

The Department of Physics offers undergraduate programs leading to either the B.S. or the B.A. degree, and a graduate program leading to a Ph.D. in physics. The Bachelor of Science degree requires a number of electives which may be taken according to the particular aims of the student, after consultation with a faculty adviser. It is designed to provide basic preparation for graduate school in physics, another physical science, or engineering, or for work in industry or a research laboratory. The Bachelor of Arts degree aims at providing students with a basic knowledge of the physical sciences that can be applied to a career in the natural or behavioral sciences, economics, or to further study in a professional school.

Students are assigned faculty advisers at the beginning of each academic year; it is the student's responsibility to meet with the adviser to plan a major program. Transfer students must consult the appropriate adviser as soon as possible.

A "Research Opportunities" booklet, which lists the faculty and their current research, is available from the department.

After completing specific prerequisites, students with a bachelor's degree in physics are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Prizes and awards. The Arnold T. Nordsieck Prize is awarded each year to an outstanding senior who has demonstrated notable promise in research. Two DuPont Prizes are awarded annually: one to the physics major designated as the

outstanding senior; one to the outstanding teaching assistant. The David S. Saxon Award is given annually to the most outstanding graduate student as evidenced by performance on the Ph.D. qualifying examination.

COOPERATIVE PROGRAM — PHYSICS AND NUCLEAR ENGINEERING

For physics students who are interested in an industrial career, one option which may be of interest is a five-year program leading to a B.S. degree in physics and a B.S. degree in nuclear engineering. Students are advised to apply for simultaneous registration in the College of Letters and Science and the College of Engineering, in order to complete the degree programs in both physics and engineering.

UNDERGRADUATE PROGRAM

Bachelor of Science — Physics

Preparation for the major. The following courses should be completed in the first two years: Physics 1, 2, 3, 4, 5, 3L, 4L, 5L; Mathematics 3A-B-C, 5A-B-C; Chemistry 1A-B-C (or Chemistry 2A-B-C). Students transferring to physics from other disciplines may substitute Physics 6A-B-C, 6AL-BL-CL for Physics 1, 2, 3, 3L, or Physics 7A-B-C-D, 7CL-DL for Physics 1, 2, 3, 4, 5, 3L, 4L, 5L, but only with explicit departmental approval. The adviser can suggest a course schedule for freshmen.

Upper-division major. Fifty-six upper-division units are required for the B.S. degree in physics, including Physics 100A-B, 105A-B, 110A-B-C, 115A-B, 118, and 128A-B. Also required are 15 additional units of upper-division physics electives, of which no more than three units may be earned in laboratory courses. With the consent of the department chair, four units of upper-division mathematics may be substituted toward the elective requirement. In order to satisfy prerequisites for those courses, which are normally taken in the senior year, students should include 100A-B, 105A-B, 115A-B, and 118 in their junior year program.

Please note: All B.S. candidates are required (1) to fulfill the General Education requirements of the College of Letters and Science for the B.S. degree; and (2) to have their lower- and upper-division programs approved by the physics faculty adviser during the first quarter in which they have declared their major.

Bachelor of Arts — Physics

Preparation for the major. The following courses should be completed in the first two years, for a total of 49 units: Physics 1, 2, 3, 4, 3L, 4L; Mathematics 3A-B-C, 5A-B-C; Chemistry 1A-B-C (or Chemistry 2A-B-C). Students transferring to physics from other disciplines may substitute Physics 6A-B-C and Physics 6AL-BL-CL for Physics 1, 2, 3, 3L, but only with explicit departmental approval. A suggested course schedule for freshmen is available from the faculty adviser.

Upper-division major. Forty-two upper-division units are required for the B.A. degree, including 30 units of upper-division physics courses and 12 units of mathematics, science, or engineering electives approved by a faculty adviser. Of the 30 upper-division units in physics, six must be upper-division laboratory.

Please note: All B.A. candidates are required (1) to fulfill the General Education requirements of the College of Letters and Science for the B.A. degree; and (2) to have their lower- and upper-division programs approved by the physics faculty adviser during the first quarter in which they have declared their major.

GRADUATE PROGRAM

Master of Arts — Physics

The Department of Physics does not offer a terminal M.A. program. Admission is to the Ph.D. program only. Exceptions to this rule are made only in the case of students who leave the Ph.D. program under particular circumstances. The M.A. degree may be awarded to students continuing in the Ph.D. program after (1) 45 quarter-units of work, with a minimum of 32 units of graduate-level courses and the rest approved by the graduate adviser; and (2) successful completion of the qualifying examination.

Doctor of Philosophy — Physics

Admission

A candidate for admission to the Ph.D. program must present an undergraduate degree in physics, or its equivalent, and verbal, quantitative, and analytical scores on the Graduate Record Examination, as well as the Advanced Test in Physics. Further information on the program, and a description of current research, is contained in the publication "Graduate Study in Physics," which is available from the department.

Degree Requirements

During the first two years of graduate work, the student will normally prepare for written and oral qualifying examinations. The preliminary examinations cover basic physics at the graduate level; the advanced examination involves topics in fields selected for research by the student. Students are expected to complete the first of these examinations at the beginning of their second year of study.

The final period of graduate study is devoted primarily to research and preparation of a dissertation. The research, which may be theoretical or experimental, is conducted under the direction of a member of the faculty, normally in an area related to his or her own field of specialization. The student must successfully defend the dissertation.

Three quarters as a teaching assistant are required in partial satisfaction of the Ph.D. degree requirements.

ASTRONOMY COURSES

LOWER DIVISION

1. Basic Astronomy
(4) Staff

A survey of the development of astronomy with an emphasis on understanding the observable properties of the solar system, the sun and other stars, our own and other galaxies, and the entire universe. Topics of current interest will be discussed as time permits. (F,W,S)

2. History of the Universe
(4) Staff

Prerequisite: Astronomy 1.
The large-scale structure of the universe, its origin, and evolution. The birth of the sun and the planets and their subsequent evolution. The conditions necessary for life elsewhere in the universe and the probabilities of its existence and detection. (S)

PHYSICS COURSES

LOWER DIVISION

1. Basic Physics — Mechanics

(4) Staff

Prerequisite: Mathematics 3A or 7A or equivalent.

Classical mechanics-kinematics, vectors, motion in one, two, and three dimensions, Newton's laws, work and energy, conservation laws, momentum, and collisions. (W)

2. Basic Physics — Sound, Heat, Fluid Dynamics

(4) Staff

Prerequisites: Physics 1 or 7A and Mathematics 3A-B or 7A-B or equivalent.

Center of mass motion, oscillatory motion, angular momentum, rotational motion, gravity and central force motion, waves, sound, and kinetic theory. (S)

3. Basic Physics — Electromagnetism

(3) Staff

Prerequisites: Physics 2, and Mathematics 3A-B-C or 7A-B-C or equivalent; concurrent enrollment in Physics 3L.

Electrostatics, DC circuits, magnetostatics, Faraday's law. (F)

3L. Physics Laboratory

(1) Staff

Prerequisite: concurrent enrollment in Physics 3. Experiments in mechanics and dynamics of moving bodies. Instruction in the use of modern laboratory instruments and techniques. Experiments using electromagnetic radiation.

4. Basic Physics — Electromagnetism, Waves, Optics

(3) Staff

Prerequisites: Physics 3; concurrent enrollment in Physics 4L.

AC circuits, Maxwell's equations and electromagnetic waves, ray optics, and wave optics. (W)

4L. Physics Laboratory

(1) Staff

Prerequisite: concurrent enrollment in Physics 4. Experiments in mechanics and dynamics of moving bodies. Instruction in the use of modern laboratory instruments and techniques. Experiments using electromagnetic radiation.

5. Basic Physics — Modern Physics

(3) Staff

Prerequisites: Physics 4; concurrent enrollment in Physics 5L.

Special relativity, quantum mechanics, and applications to atoms, nuclei, and solids. (S)

5L. Introduction to Experimental Physics III

(1) Staff

Prerequisites: Physics 4; concurrent enrollment in Physics 5.

Experiments in mechanics and dynamics of moving bodies. Instruction in the use of modern laboratory instruments and techniques. Experiments using electromagnetic radiation.

6A-B-C. Physics for Biological Scientists

(3-3-3) Staff

Prerequisite: one quarter of calculus (may be taken concurrently).

A: Mechanics, (F,W)

B: Heat, thermodynamics, electricity, and magnetism. (W,S)

C: Electromagnetic waves, optics, modern physics. (S)

6AL-BL-CL. Experimental Physics for Biological Scientists

(1-1-1) Staff

Prerequisites: concurrent enrollment in Physics 6A-B-C, or consent of instructor.

Experiments in the mechanical, electrical, and thermal properties of matter, the behavior of light, and quantum phenomena with application to the biological sciences.

7A. Physics for Engineers

(4) Staff

Prerequisite: one quarter of calculus.

Measurement, vectors, motion in one and two dimensions, particle dynamics, work and energy, conservation of energy and momentum, collisions. (W)

7B. Physics for Engineers

(4) Staff

Prerequisites: Physics 7A and two quarters of calculus.

Rotational motion, conservation of angular momentum, electrostatics, capacitance, DC circuits. (S)

7C. Physics for Engineers

(3) Staff

Prerequisites: Physics 7B and three quarters of calculus.

Magnetostatics, Faraday's Law, induction, magnetic properties of matter, harmonic motion, waves, electromagnetic waves, AC circuits. (F)

7CL. Experimental Physics for Engineers

(1) Staff

Prerequisite: concurrent registration in Physics 7C or consent of instructor.

Experiments in mechanics and dynamics of moving bodies, electromagnetism, optics, and modern physics. Instruction in the use of modern laboratory instruments and techniques.

7D. Physics for Engineers

(3) Staff

Prerequisite: Physics 7C.

Light, geometrical optics, interference, diffraction, polarization, quantum mechanics, atomic physics. (W)

7DL. Physics for Engineers

(1) Staff

Prerequisite: concurrent registration in Physics 7D or consent of instructor.

Experiments in mechanics and dynamics of moving bodies, electromagnetism, optics, and modern physics. Instruction in the use of modern laboratory instruments and techniques.

10. Concepts of Physics

(4) Staff

Not open for degree credit to students who have completed Natural Science 1A.

A survey of important concepts in physics for the nonscience major. The contents will vary depending on the interests of the students and instructor. (W,S)

11. Physics of Sound

(4) Staff

Introduction to the physics of sound; elementary mechanics, harmonic motion, and waves; acoustics of speech and hearing; physics of musical instruments. (F)

UPPER DIVISION

A grade of C- or higher is required to satisfy the prerequisites for all upper-division courses. In series of courses, such as Physics 105A-B, the earlier courses are considered prerequisites for the later ones. Exceptions will be made only with the consent of the instructor.

100A-B. Methods of Theoretical Physics

(3-3) Staff

Prerequisites: Mathematics 5C or equivalent for Physics 100A; Physics 100A for Physics 100B.

Mathematical methods in physics: theory of functions of complex variables, Fourier series, integral transforms, partial differential equations of physics, boundary value problems, Legendre and Bessel functions. Introduction to Hilbert spaces.

102. Physics and Technology of Nuclear Conflict

(3) Staff

Prerequisite: any lower-division physics sequence of at least one full year.

Technical aspects of nuclear conflict, including physics, technological applications and technology assessment. Nuclear weapons, delivery systems, basing schemes, testing, long term effects.

105A-B. Classical Mechanics

(3-3) Staff

Prerequisites: Physics 7D or Physics 5 and concurrent enrollment in Mathematics 5B or its equivalent.

Dynamics of point particles, conservation laws, motion of rigid bodies, Lagrangian formulation of mechanics, small vibrations, and normal modes. (W,S)

110A-B-C. Electromagnetism

(4-4-4) Staff

Prerequisites: Physics 7D or Physics 5; concurrent enrollment in Mathematics 5C or its equivalent.

Electrostatics, magnetostatics, electric and magnetic properties of materials, Maxwell's equations, electromagnetic waves, radiation from charged particles, special relativity. (F,W,S)

115A. Elementary Quantum Mechanics and Applications

(4) Staff

Prerequisites: Physics 5; Physics 100A or Mathematics 124A (may be taken concurrently) or equivalent.

Failures of classical physics and quantum mechanical resolutions. Schroedinger's equation, solutions for one-dimensional systems, one-electron atoms, angular momentum. (F)

115B. Elementary Quantum Mechanics and Applications

(4) Staff

Prerequisite: Physics 115A.

Spin, emission, and absorption of radiation, identical particles, multi-electron atoms, solids, solid state electronic devices, lasers. (W)

115C. Formal Theory of Quantum Mechanics

(4) Staff

Prerequisites: Physics 115B; Physics 100B or Mathematics 124B or equivalent.

Matrix formulation, perturbation, and other approximation methods; scattering. (S)

115AG-BG. Elementary Quantum Mechanics and Applications

(4-4) Staff

Prerequisite: open only by consent of the physics graduate adviser to graduate students who have not taken Physics 115A-B, or the respective parts thereof in this institution.
Same description as Physics 115A-B. (F,W)

115CG. Formal Theory of Quantum Mechanics

(4) Staff

Prerequisite: open only by consent of the physics graduate adviser to graduate students who have not taken Physics 115C, or the respective part thereof in this institution.
Same description as Physics 115C. (S)

118. Thermodynamics

(3) Staff

Prerequisites: Physics 5 or Physics 7D and concurrent enrollment in Mathematics 5C or its equivalent.

Three laws of thermodynamics, phase diagrams, entropy, equipartition of energy, specific heat, reversible and irreversible processes. Kinetic theory: Maxwell-Boltzmann distribution, pressure, viscosity, thermal conductivity, diffusion. (F)

119. Statistical Mechanics and Thermodynamics

(4) Staff

Prerequisite: Physics 5 or Physics 7D.

Kinetic theory of statistical ensembles. Boltzmann, Fermi-Dirac, and Bose-Einstein distribution laws. Relation of thermodynamic variables and microscopic properties. (S)

119G. Statistical Mechanics and Thermodynamics

(4) Staff

Prerequisite: open only by consent of the physics graduate adviser to graduate students who have not taken Physics 119, or the respective part thereof in this institution.
Same description as Physics 119. (S)

123A-B. Solid State Physics

(4-4) Staff

Prerequisite: Physics 115A.

Classification of solids; crystal symmetry, thermal electric and magnetic properties; metals, semiconductors, and the band theory of electronic states; magnetic resonance; superconductivity; imperfections. Emphasis will be placed on both fundamental and applied aspects. (F,W)

123AG-BG. Solid State Physics

(4-4) Staff

Prerequisites: Physics 115A or 115AG. Open only by consent of the physics graduate adviser to graduate students who have not taken Physics 123A-B or the respective parts.
Same description as Physics 123A-B. (F,W)

124. Nuclear Physics

(4) Staff

Prerequisite: Physics 115B.

Properties of stable nuclei. Nuclear models. Nuclear decay and nuclear reactions, including fusion and fission. (S)

125. Elementary Particle Physics

(4) Staff

Prerequisite: Physics 115B.

Introduction to elementary particles (quarks and leptons) and the phenomenology of the particles they comprise; fundamental symmetries, invariance principles, and the associated quantum numbers, strong, electromagnetic, and weak interactions and their relationship. (S)

125G. Elementary Particle Physics

(4) Staff

Prerequisite: open only to graduate students with the consent of the physics graduate adviser.

Same description as Physics 125. (S)

126. Plasma Physics

(4) Staff

Prerequisites: Physics 110A-B-C (110C may be taken concurrently).

Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research. (Not offered 1987-88.)

127A-B. Electronics for Science Majors

(3-3) Staff

Prerequisites: six units of calculus and six units of physics.

Circuit theory, semiconductor device characteristics, feedback amplifiers, oscillators, analog computers, operational amplifiers, digital and logic circuits, integrated circuits, fast pulse technique. (127A, F; 127B, W)

128A-B. Advanced Experimental Physics

(3-3) Staff

Prerequisite: Physics 115B.

Selected experiments in contemporary physics, e.g., holography, laser light scattering, optical pumping, semiconductors, superconductivity, magnetic resonance, Mossbauer effect. (F,W)

131. Gravitation and Relativity

(4) Staff

Prerequisites: Physics 105A-B (105B may be taken concurrently).

An introduction to Einstein's general relativity. The spacetime of special relativity, the principle of equivalence, gravity as geometry, the description of spacetime geometry, the spacetime of a relativistic star, solar system tests of general relativity, gravitational collapse, black holes, cosmology. (W)

133. Astrophysics

(4) Staff

Prerequisites: completion of the lower-division prerequisite courses for the physics or engineering majors, or consent of instructor.

Topics will vary with the instructor, e.g., stellar structure and evolution, origin of the elements, formation of planets, introductory cosmology, neutron stars, or other topics of particular interest to the instructor and students. (W)

133G. Astrophysics

(4) Staff

Prerequisite: open only by consent of the physics graduate adviser to graduate students who have not taken Physics 133.

Same description as Physics 133.

141. Optics

(4) Staff

Prerequisite: Physics 5.

Modern geometrical and physical optics. Polarization, coherence, interference, and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interferometry, spatial filtering, and holography. Selected topics on lasers, light scattering, and quantum optics as time permits.

142L. Experimental Research in Molecular and Solid State Physics

(1-4) Staff

Prerequisites: Physics 5 and consent of instructor. May be repeated for credit to a maximum of four units.

Course offers qualified undergraduates opportunity to work in research laboratories assisting

faculty and graduate students in experimental research in molecular and solid state physics. Each staff member has own laboratory course identified by a letter code listed in the *Schedule of Classes*.

143L. Experimental Research in Elementary Particle Physics

(1-4) Staff

Prerequisites: Physics 5 and consent of instructor. May be repeated for credit up to six units.

The course offers qualified undergraduates the opportunity to work in research laboratories assisting the faculty and graduate students in experimental research in elementary particle physics. Each staff member has own laboratory course identified by a letter code listed in the *Schedule of Classes*.

190. Undergraduate Physics Teaching

(1-2) Staff

Prerequisites: consent of instructor. Physics majors only. May be repeated for credit twice, to a maximum of four units.

Open to a limited number of qualified undergraduate students interested in physics teaching at the college level. Students will be introduced to various educational methods and engage in tutorial or laboratory teaching under the supervision of a faculty/staff member.

198. Directed Reading

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in physics. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Consent of instructor required.

Each staff member has own directed reading course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

199. Independent Studies in Physics

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in physics. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Consent of instructor required.

Directed individual study open to qualified seniors in the department. Each staff member has own independent studies course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

GRADUATE COURSES**200A-B. Mathematical Methods of Physics**

(4-4) Staff

Mathematical techniques useful in physics, including the theory of functions of a complex variable, linear algebra. Fourier transforms, differential equations, special functions. Cartesian tensors, calculus of variations, and numerical methods. (F,W)

202. Group Theory

(4) Staff

Theory of groups and their representations. Applications to solid state, atomic, molecular, and elementary particle physics. (Not offered 1987-88.)

205. Classical Mechanics

(4) Staff

Derivation of the equations of Lagrange, Hamilton, and Hamilton-Jacobi by variational principles. Application of these equations to problems involving two bodies, rigid bodies, small oscillations, and continuous systems. (F)

208. Special Topics in Classical Physics

(4) Staff

The course will vary from year to year depending on the interest of the instructor and the students. Topics may include: fluid mechanics, electrodynamics, physics of plasmas, planetary physics. (Not offered 1987-88.)

210A-B. Electromagnetic Theory

(4-4) Staff

Electrostatics, magnetostatics, boundary value problems, time varying fields, Maxwell's equations, radiation, multipole fields, scattering, relativistic particle dynamics. (W,S)

215A-B-C. Quantum Mechanics

(4-4-4) Staff

Fundamental principles; Schroedinger equation; angular momentum; perturbation theory; scattering theory, emission, and absorption of radiation; Dirac equation. (F,W,S)

217A. The Many Body Problem

(4) Staff

Prerequisite: Physics 215C.

Field theoretic methods as applied to (non-relativistic) condensed matter systems. Green's functions and diagrammatic techniques applied to various examples of interacting many body systems, including fermions, bosons, and spins. Relationship of theoretical quantities to physical measurements. (W)

217R. Advanced Topics in Condensed Matter Physics

(4) Staff

Prerequisite: Physics 217A. Topics covered will vary and may be repeated with the consent of the instructor.

In different years this course will treat in-depth special topics in such fields as: magnetism, superconductivity, quasi-one-dimensional systems, critical phenomena, and pattern formation. (S)

219. Statistical Mechanics

(4) Staff

Prerequisites: Physics 205, 215A, and 119 or equivalent taken at another institution, or consent of instructor.

Fundamental principles of classical and quantum statistics. Non-interacting Boltzmann, Bose, and Fermi systems. Virial expansion and other approaches to interacting systems. Phase transitions. (S)

221A-B. Relativistic Quantum Field Theory

(4-4) Staff

Prerequisite: Physics 215C.

Introduction to the theory of Lorentz covariant quantized fields. Global and local symmetries and conservation laws. Path integral formulation. Applications to quantum electrodynamics. (F,W)

221R. Advanced Quantum Field Theory

(4) Staff

Prerequisite: Physics 221B. Topics covered will vary; may be repeated with the consent of the instructor.

Possible topics include the $SU(2) \times U(1)$ theory of electroweak interactions, quantum chromodynamics, grand unification, the renormalization group, anomalies, current algebra, supersymmetry, lattice gauge theory. (S)

223A-B. Concepts and Phenomena of Condensed Matter Physics

(4-4) Staff

Prerequisites: Physics 215C and 219.

Lattice and electron dynamics, transport phenomena, and other major topics such as: optics, superconductivity, cooperative magnetism, electron-phonon-interactions, defects, disorder. (F,W)

224. Nuclear Physics

(4) Staff

Prerequisite: Physics 215B.

Nuclear forces. Nuclear models. Nuclear reactions and decay. (Not offered 1987-88.)

225. Elementary Particle Physics

(4) Staff

Prerequisite: Physics 125, 215C, or equivalents or consent of instructor.

Conservation laws and symmetries; particle classification and group theory; elementary Feynman diagram calculations; electromagnetic and weak interaction theory; Quark-Parton Model; introduction to quantum chromodynamics and grand unification. (F)

228. Atomic and Molecular Physics

(4) Staff

Prerequisites: Physics 215, 217.

The quantum mechanics of atomic and molecular systems will be discussed. Theoretical results will be compared with a variety of experimental measurements, and basic as well as phenomenological models will be analyzed. (Not offered 1986-87.)

231A-B. General Relativity and Relativistic Astrophysics

(4-4) Staff

Prerequisites: Physics 210A-B.

The principle of equivalence, gravity as geometry, the differential geometry of curved space time, Einstein's equations, the relativistic stars, gravitational collapse, black holes, observational and theoretical cosmology, gravitational radiation. (W,S)

231R. Advanced Topics in General Relativity

(4) Staff

Prerequisite: Physics 231B. Topics covered will vary; may be repeated with the consent of the instructor.

This course may cover in different years such subjects as: the astrophysics of compact objects, gravitational waves, the global properties of spacetime, black holes, cosmology, and quantum gravity. (F)

250. Special Topics in Astrophysics

(1-4) Staff

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

251. Special Topics in High Energy Physics

(1-4) Staff

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

252. Special Topics in Solid State Physics

(1-4) Staff

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

253. Special Topics in Optics and Spectroscopy

(1-4) Staff

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

255. Special Topics in Theoretical Physics

(1-4) Staff

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

256. Special Topics in Material Science

(1-4) Staff

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

260A. Seminar in Advanced Topics

(1) Staff

260B. Seminar in Macromolecular Physics and Organic Solids

(1) Staff

260C. Seminar in General Relativity

(1) Staff

Talks on topics in gravity and general relativity pertinent to current doctoral research in the field.

260D. Seminar in Theoretical Physics

(1) Staff

260E. Condensed Matter Seminar

(1) Staff

260F. Seminar in High Energy Physics

(1) Staff

260G. Graduate Seminar

(1) Staff

Weekly seminar on topics of research currently being pursued in the Department of Physics.

500. Teaching Assistant Seminar

(2) Staff

No unit credit allowed toward advanced degree. Required course for all teaching assistants.

Covers development of teaching techniques especially oriented to lower-division physics laboratory instruction. Theoretical aspects covered at beginning of each quarter. Practical techniques discussed including weekly meeting with class instructor, formal evaluation, and videotaping analysis. (F)

501. Apprentice Teaching

(4) Staff

No unit credit allowed toward advanced degrees.

Ph.D. students are required to act as teaching assistants for three quarters. This practicum involves supervised teaching of undergraduate physics courses. One meeting per week with instructor and one or more meetings per week with assigned discussion or laboratory sections.

503. Research Assistant Seminar

(1-3) Staff

No unit credit allowed toward advanced degrees.

Research assistants must give one or more lectures in the subject of their research in the Department of Physics. (Normally combined with Physics 260G.)

594AA-ZZ. Special Topics

(1-4) Staff

Prerequisite: consent of instructor.

Special seminar on research subjects of current interest. Each staff member has a seminar identified by a number code listed in the *Schedule of Classes*. (F,W,S)

595AA-ZZ. Group Studies

(1-6) Staff

Prerequisite: consent of instructor. May be repeated for credit to a maximum of 12 units.
Each staff member has a group studies course identified by a number code listed in the *Schedule of Classes* (F,W,S)

596AA-ZZ. Directed Reading and Research

(2-12) Staff

Prerequisite: consent of instructor.
Individual tutorial. Reading and research in special topics including work done as the basis for the dissertation. Each staff member has a directed reading and research course identified by a number code listed in the *Schedule of Classes*. (F,W,S)

597AA-ZZ. Preparation for the Qualifying Examination

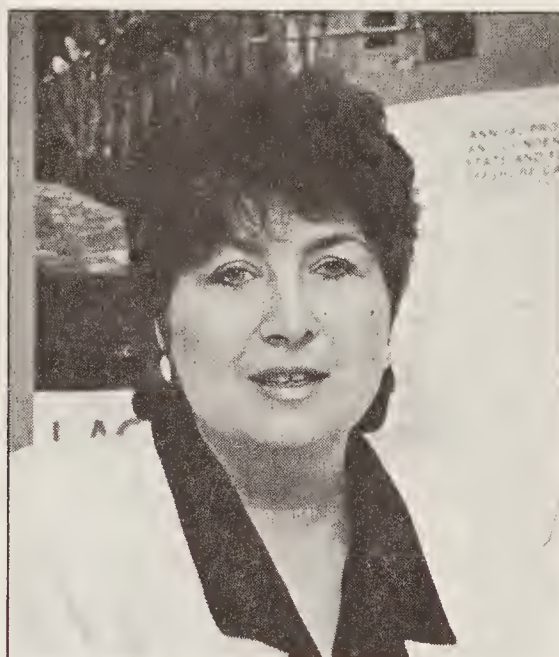
(1-4) Staff

Prerequisite: consent of the graduate adviser.
No unit credit allowed toward advanced degrees.
Directed group or individual preparation for the doctoral qualifying examination. (F,W,S)

599AA-ZZ. Dissertation Preparation

(1-12) Staff

Prerequisite: consent of instructor. May be repeated for credit up to 24 units.
This course is reserved for writing the dissertation. Each staff member has a research course identified by a number code listed in the *Schedule of Classes*. (F,W,S)



My main research interest lies in developing wise approaches for governing the world's oceans, which comprise more than 70 percent of the surface of the earth. We have just begun to ask how we should govern the oceans, for whose benefit, and with what consequences. Seeking answers to basic questions about equity and effectiveness in governing vast and invaluable ocean resources is a very creative and challenging process.

Some of my research has focused on the management of living marine resources in the U.S., conflicts in the development of offshore oil and gas resources, tensions between development and conservation in the Galapagos Islands, the roots of international conflicts involving Mexican and U.S. fisheries, and advising governments on how best to organize themselves to gain maximum benefits from their ocean resources. In a current project, I am analyzing the implications of changes in the international politics of the South Pacific that are arising as the newly independent nations in the area assert national control over huge expanses of the ocean.

UCSB is a great place for my work because it is adjacent to an area that is a microcosm of worldwide trends in increased human uses of the sea. The Santa Barbara Channel is used by a wide variety of people and managed and protected by a large number of local, state, and federal laws. Marine transportation, commercial fisheries, oil and gas development, recreation, military activities, and protection of marine mammals and endangered species are all important concerns in the Channel. It is thus an ideal laboratory for social science study of multiple uses and management of the ocean and coastal zone.

Biliana Cicin-Sain

Biliana Cicin-Sain
Associate Professor
Department of Political Science

◀ Dr. Cicin-Sain's background includes service as a policy analyst in the National Oceanic and Atmospheric Administration and the U.S. Department of Housing and Urban Development as well as visiting appointments at Woods Hole Oceanographic Institution, Harvard University, the University of Southern California, the Brookings Institution, and the Rockefeller Foundation's Center in Bellagio, Italy

John E. Moore, Ph.D., Princeton University,
Associate Professor (*public and regulatory administration*)

A. E. Keir Nash, Ph.D., Harvard University,
Professor (*politics and population, constitutional law, political change*)

Robert C. Noel, Ph.D., Northwestern University,
Associate Professor (*international relations, simulation, methodologies*)

C. Herman Pritchett, Ph.D., University of Chicago, Professor Emeritus, active service (*constitutional law, judicial process*)

Cedric J. Robinson, Ph.D., Stanford University,
Professor (*political theory, Black politics*)

Thomas S. Schrock, Ph.D., University of Chicago, Professor (*political philosophy, public law*)

Eric R.A.N. Smith, Ph.D., UC Berkeley, Assistant Professor (*public opinion, voting behavior, party realignment, quantitative methods*)

Henry A. Turner, Ph.D., University of Chicago, Professor Emeritus

M. Stephen Weatherford, Ph.D., Stanford University, Associate Professor (*political analysis, public opinion*)

John T. Woolley, Ph.D., University of Wisconsin, Madison, Assistant Professor (*public policy, political economy*)

Alan J. Wyner, Ph.D., Ohio State University, Associate Professor (*state and local politics, public policy and administration*)

"Political science," wrote Hans J. Morgenthau, "deals with the nature, the accumulation, the distribution, the exercise, and the control of power on all levels of social interaction, with special emphasis upon the power of the state." In exploring the processes by which individuals and groups acquire and use power, political science draws on historical, economic, and behavioral data to illuminate government's role in the contemporary world.

The Department of Political Science offers a balanced program, emphasizing the integration of theory and practice rather than any single approach or methodology. In addition to its standard program, the department also offers a public service emphasis and an international relations emphasis for undergraduate majors. An undergraduate honors thesis program is available to selected students. The M.A. and Ph.D. programs encompass work in all fields of political science.

Among the physical facilities for study and research is the POLIS Laboratory, which includes a computer-based simulation network for enacting real or hypothetical problems in local, national, and international politics. In addition, the department's instructional support resources include a workshop in comparative politics, a film library, and the government documents section of the UCSB Library.

Advising is available to undergraduates through the departmental undergraduate adviser who counsels students during scheduled hours and by appointment. Students are encouraged, in addition, to consult with individual faculty members about course content and professional or career concerns. Graduate advisers are appointed by the department and may be contacted through the department office.

After completing specific prerequisites, students with a bachelor's degree in political science are eligible to pursue a California teaching credential. Interested students should discuss their plans as

Political Science

Department of Political Science, Ellison Hall 3834; Telephone (805) 961-3431. Department Chair: Dean Mann.

Faculty

- Stanley V. Anderson, Ph.D., UC Berkeley, Professor (*public law, international law, Scandinavian studies*)
Gordon E. Baker, Ph.D., Princeton University, Professor (*American political and constitutional thought, state politics*)
Gayle Binion, Ph.D., UC Los Angeles, Associate Professor (*public law*)
Biliana Cicin-Sain, Ph.D., UC Los Angeles, Associate Professor (*urban politics, public policy and administration, marine policy*)
Haruhiko Fukui, Ph.D., Australian National University, Professor (*Japanese politics, comparative politics*)
Michael Gordon, Ph.D., Harvard University, Associate Professor (*international politics, Western Europe*)
Wolfram Hanrieder, Ph.D., UC Berkeley, Professor (*international politics, American and comparative foreign policy*)
Raghavan Iyer, D.Phil., Oxford University, Professor Emeritus
M. Kent Jennings, Ph.D., University of North Carolina, Professor (*political socialization*)
Edmond J. Keller, Ph.D., University of Wisconsin, Professor (*African politics, Black urban politics in the U.S.*)
Alan P. L. Liu, Ph.D., Massachusetts Institute of Technology, Professor (*Chinese politics, comparative politics*)
Dean Mann, Ph.D., UC Berkeley, Professor (*American politics, natural resource policy and administration*)
Peter H. Merkl, Ph.D., UC Berkeley, Professor (*comparative politics, European politics*)

soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Political Science

Preparation for the major. Political Science 1, 2, 3, and 12 (or 100). Transfer students may consult the undergraduate adviser about substitutions.

Required work in cognate disciplines: five courses to be distributed among the following three areas, with at least one course taken in each. Approved courses are indicated.

- Group 1. History 4A-B-C, 12, 17A-B-C, 19, 46, 72, 86, 105, 125A-B, 127, 128A-B, 167A-B, 171A-B, 173A-B, 174A-B, 175A-B; Economics 103, 112A-B, 113A-B
- Group 2. Economics 1 and 2 (or 109), 110, 114, 120, 126, 175
- Group 3. Anthropology 2, 102, 103, 104, 106, 108, 110, 114, 134; Sociology 1 or 101, 2, 48, 120, 126, 130, 131, 134, 148A-B, 167, 172, 173, 174; Geography 106; Philosophy 108; Religious Studies 40, 141A-B-C

Upper-division major. Thirty-six upper-division units are required, which must include at least one course from each of the following three groups (12 units):

- Group 1. Political Science 105, 121, 147
- Group 2. Political Science 110, 111, 112, 113, 114, 186, 187, 188, 189
- Group 3. Political Science 115, 152, 153, 154, 155, 156, 157, 158, 180, 181

The remaining 24 units may include courses from the above options other than those used for the 12-unit requirement, as well as other upper-division political science courses (excluding 100). No more than a combined total of eight units of courses numbered 190 and above, nor more than four units each in Political Science 190, 192, 193, 194, or 199, may apply toward major requirements. Up to four units of Political Science 192, which is available only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Bachelor of Arts—Political Science—International Relations Emphasis

Preparation for the major. Political Science 1, 2, 3, and 12 (or 100). Transfer students may consult the undergraduate adviser about substitutions.

Required work in relevant disciplines: History 4A-B-C; Economics 1 and 2 (or 109); Psychology 102 or Sociology 2. Two additional courses must be taken from the following list: Anthropology 115; Economics 107, 112A-B, 114, 180, 181; Geography 5; Psychology 134, 138; Sociology 138, 141; History 171A-B or another upper-division history course in Asian, Latin American, European, or African history.

Language requirement: twenty units in a language of the student's choice, usually courses 1 through 5, or an equivalent level of competence.

Upper-division major. Forty upper-division units in political science, to be distributed as follows:

- A. Political Science 105, 121, and 127
- B. Two courses from Political Science 120, 122, 123, 124, 125, 126, 128, 129, 131, 132, 133
- C. Two courses from Political Science 109, 130, 134, 135, 136, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148A-B, 149, 150A-B
- D. Three courses from the following, but no more than two courses from any one category:

- (1) Political Science 180, 181, 185
- (2) Political Science 155, 157, 158
- (3) Political Science 110, 112, 113, 114, 189

Note: With departmental approval, Political Science 192 (4 units) may be substituted for one course in Area D-1. Up to four units of Political Science 192, which is available only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Bachelor of Arts—Political Science—Public Service Emphasis

The course work in the public service emphasis focuses on the fields of politics and public administration and includes work in sociology, and economics. Students in this emphasis are required to serve a one-quarter, full-time internship in a governmental or political office during their senior year. Internships are open to all political science majors, whether or not they choose the public service emphasis. To qualify for the internship, students are expected to have a 3.0 grade-point average (students not in the public service emphasis must have a 3.2) and junior or senior standing; they must also have completed courses relating to the work they plan to perform as an intern. Departmental approval is required and interested students should see the undergraduate adviser for further details.

Preparation for the major. Political Science 1, 2, 3, and 12 (or 100). Transfer students may consult the undergraduate adviser about substitutions.

Required work in relevant disciplines:

- A. Computer Science 5, or Interdisciplinary Studies 5, or Sociology 109A
- B. Economics 1 and 2 (or 109)
- C. Economics 3A and 3B or Economics 3A and 3C
- D. English 42 or 106 or 109B
- E. History 4A-B-C or 17A-B-C

Upper-division major. Forty-four upper-division units in political science are required, to be distributed as follows:

- A. Two courses from Political Science 170, 180, 181, 182, 185
- B. One course from Political Science 152, 153, 154, 174, 175, 176
- C. One course from Political Science 155, 157, 158
- D. One course from Political Science 161, 162, 163
- E. One course from Political Science 115, 165, 166, 167, 168
- F. One course from Political Science 105, 110, 113, 114, 121, 127, 147, 189
- G. Political Science 104
- H. A total of 12 units of Political Science 192 and either 196PS or 199, to be taken during one quarter of internship while registered at UCSB. Up to eight units of Political Science 192, which is available only passed/not passed, may be taken for major credit; all other courses must be taken for letter grades.

Honors Thesis Program

In the winter quarter of the junior year, students with outstanding academic records are eligible for the department's honors thesis program. Those accepted begin their work in the following quarter in a specially designed seminar. In their senior year, they take additional seminar work and write a thesis. Honors graduates will be identified separately each year at the head of the graduation list for political science, and will be eligible for graduation with Distinction in the Major. Details are available from the department office.

GRADUATE PROGRAM

Master of Arts—Political Science

The work offered by the Department of Political Science falls into the following seven fields: American politics, public policy and administration, public law, international relations, comparative politics (including area studies), political theory, and methodology.

Admission

The department's "Graduate Program Statement" offers a detailed explanation of the program. Applicants must submit results of the Graduate Record Examination Aptitude Test.

Degree Requirements

The M.A. degree in political science is offered under Plan 1 (thesis plan), Plan 2 (oral examination plan), and Plan 3 (public policy internship plan). In Plan 1, candidates must complete at least 30 units of course work, normally in graduate courses in political science, and write a thesis. In some cases, a candidate may be required to take either a written or an oral examination.

In Plan 2, candidates must complete at least 36 units of course work, normally in graduate courses in political science, including course work in at least three of the political science fields listed above. In addition, candidates must pass an oral examination in two fields and complete two courses or seminars outside of the examination fields.

In Plan 3, candidates must complete 36 units of credit, including 12 in the field of public administration and public policy and 12 in the fields of American politics and/or public law. Eight units of credit will be awarded for academic work associated with a supervised internship. Candidates must pass an examination in two of the political science fields listed above.

Master of Arts—Public and Social Affairs

This is a one-and-one-half to two-year program designed to train practitioners in federal, state, or local government or the private nonprofit sector.

Degree Requirements

The program requires a minimum of 36 units of course work, a full-time internship of 10-12 weeks, a substantial paper related to the internship or an associated policy problem, and a written comprehensive examination or M.A. thesis. The program includes four to five required courses (Political Science 204, 208, 215, 235), at least two applied courses from the department's public affairs "special topics" offerings, and three to five electives from one of the following groups: (1) public administration and the policy process; (2) public policy formulation; (3) multivariate methods; (4) policy evaluation; and (5) a policy area (poverty and crime, population, natural resources and the environment, education, and labor).

Doctor of Philosophy—Political Science

Admission

Completion of the M.A. degree or its equivalent is prerequisite for admission to the doctoral program. Applicants must submit results of the Graduate Record Examination Aptitude Test. The "Graduate Program Statement," available from the graduate adviser or the department office, offers a detailed explanation of the program.

Degree Requirements

Residence. A minimum of two years of fulltime residence in graduate study, at least one year of

which is spent in continuous residence, is required for the doctorate.

Fields of study. The Ph.D. program centers on course work and preparation in three written examination fields, plus course work in a fourth, nonexamination field. Typically, field choices are made from among the following: political theory, public law, public administration and public policy, international relations, comparative politics, and American politics. It is also possible to tailor special fields to the interests of individual students. Appropriate courses may be taken at other UC campuses through the Intercampus Exchange Program.

Language and research skills. The student may choose a foreign language option or a research skills option to fulfill the language/skills requirement for the Ph.D. The research skills option may be associated with the choice of three methodological courses under the fourth nonexamination field requirement.

Examinations. After successful completion of the written qualifying examinations, the student will take an oral examination which will explore his or her overall competence as a political scientist.

Dissertation. With the advice and approval of the doctoral committee, each student will select a dissertation topic in the major field of specialization. The dissertation must be based on original research and must make a significant contribution to knowledge in the field.

Teaching assistantships. Before receiving the Ph.D. degree, a candidate must have formal teaching or research experience in an institution of higher learning. This requirement may be satisfied by serving as a teaching assistant, associate, or research assistant in the Department of Political Science.

POLITICAL SCIENCE COURSES

LOWER DIVISION

Upper-division students should not take Political Science 1, 2, or 3, without the consent of the undergraduate adviser. Freshmen entering fall quarter are advised to take Political Science 1 or 12.

1. Political Ideas in the Modern World

(4) Baker

Perennial questions and diverse responses, with emphasis on such central concepts as liberty, equality, power, authority, justice, law, and constitutionalism. Democracy and authoritarianism. The nexus between ends and means in political life. (F)

2. Comparative and International Politics

(4) Gordon

Order and violence in national and international politics. The nation-state, nationalism, and political development. Power, elites, and responsiveness. Revolution and mass movements. The social base of politics: culture, socialization, and participation. Parties and groups. (W)

3. Introduction to Public Policy

(4) Woolley, Moore, Wyner

Prerequisite: Political Science 12 recommended.

Formation, administration, and evaluation of public policy. The problem of bureaucratic power and public accountability in the United States illustrated by specific case studies. (S)

10. American Government: The Political Process

(4) Staff

Prerequisites: for lower-division students only; juniors and seniors may meet the American History and Institution requirement by Political Science 100.

Parties, interest groups, campaigns, and elections; congress and the presidency.

12. American Government and Politics

(4) Wyner, Smith, Mann

Not open to students who have received credit for Political Science 5, 10, or 100.

Political ideas, institutions, and processes of American government. The role of Congress and the president in policy formation and of the Supreme Court in interpreting the Constitution. (F,W,S)

15. Public Policy Controversies

(4) Staff

Prerequisite: an introductory course in American government or consent of instructor.

An analysis of selected major political conflicts and governmental programs in the United States.

19. Political Science Conference

(4) Staff

May be repeated once for credit.

Seminar on selected central themes in political science. Themes will vary according to instructor. (F,W,S)

19H. Political Science Conference

(Honors)

(4) Staff

Prerequisites: approval of department.

Restricted to freshmen honors designees.

Political Science 19H is addressed to potential honors students. An honors seminar on selected central themes in political science. Themes will vary according to instructor.

25. Theory and Practice in Politics

(4) Staff

The ends and means of political life in theory and practice, with emphasis upon broadening and heightening of individual and collective consciousness; classical dialectic of transformation in the contemporary context of global politics; different models of society of the future.

49. Library Research Methods in Political Science

(2) Staff

The course will consist of lectures, brief written assignments, and oral reports. Class discussion on the lectures and reports will be encouraged as well as discussion on actual problems encountered by students in their research work.

90A. Introductory Laboratory/Seminar in Policy Problems

(2) Noel, POLIS Staff

Political Science 90B may be taken independently of Political Science 90A.

An introduction, through participation in simulation and/or gaming exercises, to selected current problems in public policy, including urban, environmental, and foreign policy problems.

90B. Introductory Laboratory/Seminar in Policy Processes

(2) Noel, POLIS Staff

Political Science 90B may be taken independently of Political Science 90A.

An introduction, through participation in simulation and/or gaming exercises, to the relationship between policy-making processes and policy content, focusing on decision processes in the executive, legislative, and judicial branches of government at all levels.

98. Readings in Political Science

(1-4) Staff

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department. May be repeated for credit to a maximum of four units. No unit credit allowed toward the major.

Critical reviews and discussions of related topics in political science.

99. Introduction to Research

(1-4) Staff

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department. May be repeated for credit to a maximum of four units. No unit credit allowed toward the major.

Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research or work in a research group.

UPPER DIVISION

100. American National Government

(4) Staff

Not open to students who have received credit for Political Science 5, 10, or 12.

Institutions of our national government and the political ideas on which these institutions have been established; the role of Congress, the president, the courts, administrative agencies, and regulatory legislation. (F)

102. Political Socialization

(4) Jennings

Prerequisite: Political Science 12 or consent of instructor.

The process, content, and goals of learning political values and behavior patterns. The application and significance of such characteristics in the functioning of political systems. Socialization as a theoretical and analytical component of political culture.

103. Strategies in Politics

(4) Staff

A nontechnical, introductory survey of game theory with emphasis on applications in everyday political and social behavior. Topics include the formation of coalitions in legislatures, bargaining, competition among political parties, the consequences of electoral laws, etc.

104. Political Research Methods and Data Analysis

(4) Weatherford, Jennings

An introduction to the formulation of research problems, the use of survey research and demographic political data, the use of the computer to analyze political data.

105. Introduction to Comparative Politics

(4) Merkl

A comparison of federalism, political parties, and executive leadership in different countries. A core course generally recommended, and in some cases required, for advanced work in comparative government. (W)

107. Revolution in The Third World

(4) Keller

Prerequisite: upper-division standing.

Analysis of the dynamics of revolutionary change in the modern world; particular reference to the role of peasants in Third World revolutions.

108. Politics and Literature

(4) Staff

This course will explore problems concerning alienation, obligation, power, freedom, and fulfillment as treated by ancient and modern authors.

109. Revolution and Mass Movement

(4) Liu

Prerequisite: Political Science 2.

Analyzing the dynamics of revolutions from the French and Soviet to contemporary revolutions in Asia, Latin America, and the Middle East.

110. Political Concepts

(4) Robinson

Introduction to some of the main concepts of political theory such as the individual and the state, freedom and equality, and political obligation, and their relevance to modern society and government.

111. Anarchist Thought

(4) Staff

An examination of the diverse and enduring strains of anarchist thought concerning the reconstruction of society, politics, and the individual personality. Theories and programs from Godwin to Gandhi, the late eighteenth century to the present, will be considered with an emphasis on the relation between theory and practice.

112. Marxism

(4) Robinson

Concepts of state, law, alienation, and the relationship between theory and practice. Historical dimensions, including the Hegelian heritage, Marxist theory, various stages of Marx's intellectual development, Engels' contributions, and the "socialism/communism" split; current aspects of Neo-Marxism.

113. American Political Thought

(4) Baker

The origin and development of significant political ideas in the United States, as expressed in the contributions of selected thinkers. (W)

114. Democratic Theory

(4) Staff

Prerequisite: not open to freshmen.

An analysis of the philosophical bases of democracy, such as political obligation (Why should I obey the state?), political equality (Why should one person have one vote?), liberty, consent, representation, and rights.

115. Law in the Modern State

(4) Binion

Legal institutions in democratic societies, with particular reference to the United States. The role of lawyers, judges, and courts. The unique functions of the Supreme Court in the American political system. Judicial reasoning as reflected in selected decisions. (F)

117. Jurisprudence

(4) Anderson

Prerequisite: Political Science 115 or consent of instructor.

An inquiry into the nature of law and justice.

120. Mass Media and World Affairs: International Political Communication

(4) Noel

Prerequisites: A) one course in social science analysis, e.g., Political Science 104, Sociology 43, Communication Studies 89, Psychology 101. B) Political Science 121 or equivalent course in international relations.

An examination of the role of mass media (especially news) in shaping world affairs, including study of global information flows in the international system, review of the debate over the world "information order" and analysis of the institutional and behavioral processes involved in the creation of "mass mediated reality."

120L. Laboratory in Mass Media and World Affairs

(1) Noel

Prerequisite: concurrent enrollment in Political Science 120 is required.

Participation in simulation exercise of the organizational process model of news; collateral readings of laboratory manual and materials.

121. International Politics

(4) Gordon, Hanrieder, Anderson

Prerequisite: a lower-division course in Political Science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

An examination of theories concerning the actions, interactions, and relationships among nation-states.

122. Selected Problems in International Relations: Conflict in the Middle East

(4) Noel

Prerequisite: Political Science 121 or consent of instructor.

Patterns of conflict and coalition in the Middle East, including the regional impact of the policies of global powers. Special analysis of Arab-Israeli conflict: the perspectives of belligerents; psychological dynamics; evaluation of approaches to conflict resolution.

122L. Learning Laboratory in the Middle East

(1) Noel

Self-paced instruction of background materials on the Middle East.

123. Atomic Energy and International Relations

(4) Noel

A critical review of strategic thought with regard to nuclear weapons, including an examination of arms control and disarmament proposals and the study of efforts to control the spread of sensitive civilian technologies. Survey of national policies toward nuclear energy and weapons.

124. International Organization

(4) Anderson

The nature and function of international organization, stressing an evaluation of the experience of the League of Nations and the United Nations; regional organizations and specialized agencies.

125. International Law

(4) Anderson

Nature and sources of international law; international legal personality; nationality, territory, jurisdiction; diplomatic and consular agents; treaties; war; neutrality.

127. American Foreign Policy

(4) Hanrieder, Noel, Nash

The United States in world politics. Policy-making institutions, particularly the presidency, Congress, State Department, and the military establishment. Interaction between domestic and external politics.

128. Soviet Foreign Policy

(4) Staff

The foreign policies of the Soviet Union considered in relation to such concepts as continuity and change. Messianism and real-politik, tactics and strategy, coexistence expansion.

129. The United States, Russia, and Europe

(4) Gordon

The cold war and East-West tensions. NATO and its military problems, including nuclear strategy and arms control. Soviet foreign policy and its hold over East Europe. Transatlantic strains caused by peace movements, domestic trends, and new economic problems.

130. Comparative Communist Systems

(4) Staff

A comparative examination and analysis of the Communist systems of Eastern Europe, Soviet Russia, and China, with particular reference to sources of growing diversity in institutions, concepts of man and society, economic policy, and the role of the party.

131. China in World Affairs

(4) Liu

The ideological and cultural attitudes of mainland China, with emphasis on general policies both within the Communist world and other areas (South Asia, Africa, and America).

132. Latin America in World Affairs

(4) Staff

Relations of Latin America with the United States and other world powers; Pan-Americanism and its relation to world organization.

133. Africa in World Affairs

(4) Keller

The political economy of African international relations; economic dependency and underdevelopment; decolonization and liberation; the nonaligned movement; relations between Africa and the European Economic Community; the OAU and the UN, Commonwealth, Arab League, etc.

134. Relations between the United States and Mexico

(4) Staff

Prerequisite: junior standing or consent of instructor.

A general examination of relations between the United States and Mexico in the nineteenth and twentieth centuries. Emphasis is placed on issues such as the origins of conflict and cooperation, and current issue areas like immigration.

135. Government and Politics of Japan

(4) Fukui

The organization and operation of Japanese politics, with particular attention to domestic political forces and problems.

136. Government and Politics of China

(4) Liu

The ideology, structure, and functions of the Chinese political system, with emphasis on the nation-building process under the Communist regime.

138. Politics of the Pacific Community

(4) Staff

Prerequisite: upper-division standing.

Development of the Pacific Basin idea, the political-cultural parallels and connections among Pacific Rim nations, seen against the background of trade and investment across the Pacific and technological progress which has made the Pacific Basin concept a reality.

139. Government and Politics in Southeast Asia

(4) Fukui

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

A general introductory survey of modern and contemporary developments in Southeast Asia.

140. Politics of France and Italy

(4) Merkl

The political culture, history, political parties, and governmental organization of France and Italy.

141. Politics of Germany

(4) Merkl

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

The political culture, history, political, and social forces, and governmental organization of Western Germany and Eastern Germany.

143. Government and Politics in the Soviet Union

(4) Staff

Ideological foundations. Structure and methods of the Communist party. The apparatus of government and its development.

144. Governments of Central and Eastern Europe

(4) Staff

Prerequisites: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

The political cultures, ruling parties, ideological foundations and practices, and socioeconomic problems. Foreign policies, including analyses of cohesive and divisive forces within the Communist bloc.

145. The Politics of Scandinavia

(4) Anderson

The political culture, institutions, processes, and relations of the Nordic countries—Denmark, Finland, Iceland, Norway, and Sweden. Emphasis on constitutional history.

146. African Politics

(4) Keller

Comparative analysis of the politics of sub-Saharan African states. Special attention is given to the role of economic, sociological, and historical factors in contemporary politics and national development.

147. The Politics of Developing Areas

(4) Fukui

A comparative analysis of the political systems of a selected number of African, Asian, and Middle Eastern countries, with particular attention to the general problems of political development and modernization common to all of them.

148A-B. Governments of Latin America

(4-4) Staff

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

A: A comparative study of governmental and political development, organization, and practices in the states of Middle America.

B: A comparative study of governmental and political development, organization, and practices in the states of South America.

150A. Politics of the Middle East

(4) Staff

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements), or upper-division standing.

The development of governmental institutions and political forces in the postcolonial era. Emphasis will be placed on relationships between ideology, cultural dynamics, and politics, including examination of inter-Arab politics, the Arab-Israeli conflict, and the war in Lebanon.

150B. Politics of the Middle East

(4) Staff

Prerequisite: Political Science 150A; or consent of instructor.

Political development and nationalism in the Northern Tier, Arab North Africa, and the Arabian

Peninsula. The politics of oil. The resurgence of Islam, Iran, Iraq, Saudi Arabia, Turkey, Afghanistan, great power rivalry in the Middle East since 1945.

151. Voting and Elections

(4) Jennings, Weatherford

Introduction to elections and voting cross-nationally and at various levels of government: the role of electoral rules, party competition, and campaigns; the influence of issue, candidate, and partisan appeals on the vote; the effect of elections on public policy.

152. American Political Parties

(4) Smith

The nature, characteristics, and history of American political parties; party organization; political campaigns and finance; nominations, elections, and electoral problems.

152L. American Political Parties Laboratory

(1) Staff

When offered it must be taken concurrently with Political Science 152.

Laboratory exercises in the study of political parties with emphasis on party organization, nominations, elections, and electoral problems.

153. Political Interest Groups

(4) Weatherford

The nature and function of organized interest groups and their impact upon public opinion and government.

154. Public Opinion

(4) Weatherford, Jennings

A study of the formation and nature of public opinion, including: the public's political sophistication; the role of emotion in political thinking; nature of political culture; growth of political alienation and the forms of political participation.

155. American Legislatures

(4) Smith

The organization, operation, and politics of Congress and the state legislatures; problems of representation, leadership, and relations with interest groups.

155L. American Legislatures Laboratory

(1) Smith

Prerequisite: must be taken concurrently with Political Science 155.

Political science laboratory in the organization, operation, and politics of Congress and the state legislatures; problems of representation, leadership, and relations with interest groups.

156. Analysis of Political Behavior

(4) Weatherford

Theories, methodologies, and findings of the behavioral approach to the study of the political system and men in that system. Chief reference is to the American system.

157. The American Presidency

(4) Woolley

Analysis of the institution of the presidency, its functions, formal and informal relationships, and its limitations within the American political system. Emphasis on the dynamics of the presidency, including presidential personality, conceptions of role, impact of public opinion, and responses to changes in the environment.

158. Power in Washington

(4) Staff

Prerequisite: upper-division standing.

An examination and assessment of the policy and political linkages between the White House and Capitol Hill — decision making, legislative enactment, administrative implementation; the presidential establishment, bureaucratic politics, and

the politics of influence and access in Washington.

161. State and Local Government

(4) Baker, Wyner

Basic problems and recent developments, with emphasis on state political forces, institutions, and processes. Intergovernmental relations.

161L. State and Local Government Laboratory

(1) Baker

Prerequisite: must be taken concurrently with Political Science 161.

Political Science laboratory in basic problems and recent developments, with emphasis on state political forces, institutions, and processes. Intergovernmental relations.

162. Urban Government and Politics

(4) Cicin-Sain

Prerequisite: sophomore standing; Political Science 161 recommended.

Problems of politics and administration in urban and metropolitan areas.

162L. Urban Government and Politics Laboratory

(1) Cicin-Sain

Prerequisite: must be taken concurrently with Political Science 162.

Laboratory exercises in metropolitan government and politics with emphases on local interest groups, local decision making, and intergovernmental relations.

163. California Government and Politics

(4) Wyner

Characteristics of state and local government in California and an examination of political factors in the development of selected public policies.

165. Criminal Justice

(4) Anderson

Problems and functions of police, prosecution, and defense, relating to such problems as plea-bargaining, exclusionary rule, trials, bail, and sentencing.

166. Constitutional Law: Distribution of Power

(4) Anderson, Nash

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as arbiter of federalism and separation of powers; interplay of political, social, and economic forces.

167. Constitutional Law: The Bill of Rights

(4) Pritchett, Nash, Binion

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as interpreter of First Amendment freedoms of expression and conscience, with some attention to procedural guarantees.

168. Constitutional Law: Civil Rights

(4) Nash, Binion

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as interpreter of political, social, and civil rights.

170. Public Policy Analysis

(4) Cicin-Sain

The assumptions, goals, content, and consequences of selected domestic policies. Concentrating on the period since 1960. Discussion of the nature of collective action, methods of policy analysis and evaluation, and problems of implementation.

170L. Public Policy Laboratory

(1) Cicin-Sain

Political science laboratory on public policy problems. Emphasis on federal decision making in different policy areas.

171. Politics and Communication

(4) Robinson

The role of communications media and their influence on politics. How definitions of what is "news" and the way it is conveyed shape public thinking on political issues and affect candidates, causes, and public perceptions of government institutions.

174. Chicano Politics

(4) Staff

Prerequisite: upper-division standing. Same course as Chicano Studies 174.

Political life in the barrio, political behavior of the Chicano community, and representation of Chicanos by elected officials and interest groups.

175. Politics of the Environment

(4) Mann, Nash

Analysis of environmental policy issues and their treatment in the political process. Discussion of the interplay of substantive issues, ideology, institutions, and private groups in the development, management, protection, and preservation of natural resources and the natural environment.

176. Black Politics in America

(4) Robinson

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

A general survey of political phenomena in the Black community. American political institutions, law, legislation, and administration will be examined in theory and practice to determine their function in relation to Black politics.

177A-B. Politics and Population

(4-4) Nash

Political Science 177A is prerequisite to Political Science 177B.

This two-quarter course sequence will explore changes in population growth, population migration, and demographic composition as political problems in both industrialized and nonindustrialized countries. Political effects of population-induced social, economic, and environmental strains. Hidden vs. deliberate population policies, population control, "cultural-economic" imperialsms, and political equity. Freedom, technology, population change, and political values.

180. Public Administration and Public Policy

(4) Moore

The nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process.

180L. Public Administration and Public Policy Laboratory

(1) Moore

Prerequisite: must be taken concurrently with Political Science 180.

Political science laboratory in the nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process.

181. Public Administration: Organization and Process

(4) Wyner

Prerequisite: upper-division standing. Students planning to complete both Political Science 180

and 181 are encouraged to begin with Political Science 181.

Concepts and issues of public administration, including theories of organization, decision making, administrative behavior, and budgetary processes.

182. Marine Policy

(4) Cicin-Sain

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in departmental program requirements), or upper-division standing.

An introduction to ocean policy-making in the United States with emphasis on the institutional structures and the politics involved in managing ocean resources and uses. Main topics covered include offshore energy policy, fisheries management, and coastal zone management.

185. Government and the Economy

(4) Moore

Government's evolving role in economic life; the cultural, political, and philosophical setting of government-business relations; the maintenance and moderation of competition; the goals, methods, and politics of regulatory administration. (F)

186. Parapolitics and the City of Man

(4) Staff

The foundations and frontiers of politics; the interrelation of long-term goals and short-term objectives; political responsibility in the optimal use of global resources; alternative models of the society of the future.

187. Classical Political Theory

(4) Schrock

A careful examination of major texts and thinkers in the ancient world and in medieval times. (F)

188. Modern Political Theory

(4) Schrock

Development of political ideas from the sixteenth century to the nineteenth century. (W)

189. Recent and Contemporary Political Theory

(4) Robinson

Prerequisite: a lower-division course in political science or cognate discipline (acceptable cognate courses listed in department program requirements) or upper-division standing.

A reconstruction of contending theories of political order with which western intellectuals, from the nineteenth to the present century, have confronted an era of world historical changes.

Note: No more than a combined total of eight units of courses numbered 190 and above (nor of four units each in Political Science 190, 192, 193, 194, or 199) may apply toward the major requirements. See public service emphasis for an exception.

190A. Laboratory/Seminar in Urban Policy Problems

(2) POLIS Staff

Political Science 190A may be taken independently of other 190 laboratories.

An examination, through computer-based gaming and simulation, of selected problems in urban policy, with special emphasis on the relationships among social, political, and economic policy alternatives and the dynamics of growth and decay.

190B. Laboratory/Seminar in Foreign Policy Problems and Processes

(2) Noel and Staff

Prerequisites: 12 units of upper-division work in international relations and foreign policy and/or international economics. May be repeated once for credit.

An examination, through participation in a "POLIS Network" diplomatic exercise, of selected international problem areas including great-power relations, arms control, economic and monetary problems, and selected regional subsystems. Policy-making structures and processes are also examined.

190C. Laboratory/Seminar in Environmental Policy Problems

(3) POLIS Staff

Political Science 190C may be taken independently of other 190 laboratories.

An examination, through computer-based gaming and simulation, of selected problems in environmental policy and politics. Offerings of Political Science 190C will alternate between an urban air pollution focus (the "METRO-APEX" simulation) and a water pollution focus (the "River Basin Model"). Accordingly, Political Science 190C may be repeated for credit.

190D. Laboratory/Seminar in Political Communications

(2) Noel

Prerequisites: prior upper-division work in communications studies, the sociology of news, and/or political communications; consent of instructor. May be repeated once for credit.

Empirical studies on selected topics in political communications with special emphasis on electronic and print news media.

190P. Laboratory/Seminar in Polimetrics

(2) Staff

An examination of the basic concepts of sampling, measurement, bivariate, and multivariate analysis, causal inference, and the use of computer-based statistical packages as they relate to political analysis. In addition, a general understanding of statistical tests will be sought.

190S. Laboratory/Seminar in Social and Political Theory

(2) POLIS Staff

Political Science 190S may be taken independently of other 190 laboratories.

An examination, through participation in a simulated society exercise ("SIMSOC"), of selected problems in general social and political theory, including the problems of social order, legitimacy, and collective versus individual decision.

192. Field Research in Political Science

(4-12) Staff

Prerequisites: upper-division status, 3.0 overall grade-point average, approval by department. Directed research on the political process through participant observation and relevant reading. Individually assigned, instructed, and supervised field-work. Students will examine first-hand behavior in leading political roles in American politics.

194. Group Studies

(1-4) Staff

Prerequisites: consent of instructor; upper-division standing. Subject to departmental approval, students may repeat this course. Only four units may apply to the major. Themes will vary according to instructor.

195. Honors Seminar

(4) Staff

Prerequisite: consent of instructor.

An intensive analysis of the approaches, problems, and methodologies of a particular sub-field of political science.

196. Senior Seminar in Political Science
 (4) Staff

197A-B-C. Honors Thesis Seminar in Political Science
 (4-4-4) Staff
Prerequisites: senior standing; 3.3 cumulative grade-point average; 3.5 grade-point average in major; approval of department. Political Science 197A-B-C is a three-quarter sequence course with the final grade issued upon completion of 197C. Only four units of credit may be applied toward the major.
 Honors students, in three-quarter sequence of seminars, writing theses under close faculty supervision.

197D-E-F. Seniors Thesis in Political Science
 (4-4-4) Staff
Prerequisites: senior standing; 3.0 grade-point average; approval of department. Students may take this in-progress graded sequence for either two or three quarters with 197F designated as the final quarter.
 Selected seniors pursue individual, significant research projects under close supervision of faculty readers.

199. Independent Studies in Political Science
 (1-5) Staff
Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in political science. Students are limited to five units per quarter and 30 units total in all 198/ 199 courses combined. Admission by special permission only; for majors. No more than eight units of Political Science 199 may count toward completion of the major requirements.

GRADUATE COURSES

Since the emphasis in some seminars changes from year to year, detailed course descriptions are available in the department office during the quarter prior to the seminar offering.

203. The Nature of Political Inquiry
 (4) Weatherford
 (F)

204. Research Design and Data Collection
 (4) Jennings

205. Measurement and Data Analysis in Political Research
 (4) Weatherford

206. Advanced Political Research Methods I
 (4) Smith, Weatherford
Prerequisite: graduate standing.

207. Advanced Political Research Methods II
 (4) Smith, Wyner
Prerequisites: graduate standing, and Political Science 206.

210. Political Theory
 (4) Staff
Prerequisite: graduate standing.

215. The American Governmental Process
 (4) Mann, Wyner
 (F)

220. Constitutional Interpretation
 (4) Nash

225. International Relations
 (4) Gordon, Hanrieder
 (F)

230. Comparative Political Systems
 (4) Merkl

235. American Public Administration
 (4) Mann
Prerequisite: graduate standing.

237. Seminar in Ideology and Personality
 (4) Liu

240. Seminar on Classical Political Thinkers
 (4) Schrock
Prerequisite: graduate standing.

241. Seminar on Modern Political Thinkers
 (4) Robinson, Schrock
Prerequisite: graduate standing.

242. Seminar on Contemporary Political Thinkers
 (4) Robinson, Schrock
Prerequisite: graduate standing.

243. Seminar in Political Concepts
 (4) Schrock

248. Seminar in American Political Thought
 (4) Baker

250. Seminar in Political Socialization
 (4) Cicin-Sain

251. Political Representation
 (4) Jennings

252. Seminar in Public Opinion and Political Participation
 (4) Weatherford, Jennings

253. Seminar in Political Interest Groups
 (4) Weatherford

254. Seminar in the Legislative Process
 (4) Smith

255. Seminar in State Government and Politics
 (4) Baker, Wyner

256. Seminar in the American Presidency
 (4) Wooley

257. Seminar in Urban Government and Politics
 (4) Cicin-Sain

258. Seminar in Politics and Population
 (4) Nash
Prerequisite: graduate standing.

259. Seminar in Political Parties
 (4) Smith

260. Seminar in the Judicial Process
 (4) Pritchett

261. Seminar in Public Law
 (4) Anderson, Nash

262. Seminar in American Constitutional Law
 (4) Binion, Nash, Pritchett

263. Seminar in the Administration of Justice
 (4) Anderson
Prerequisite: graduate standing.

264. Seminar in American Jurisprudence
 (4) Baker

271. Seminar in International Relations in the Information Age
 (4) Noel

272A-B. Seminar in International Law and Organization
 (4-4) Anderson
Prerequisite: Political Science 225 or equivalent.

273A-B. Politics of the International Economics
 (4-4) Gordon
Prerequisite: graduate standing. Political Science 273A is prerequisite to 273B.

275. Regional Subsystems in International Relations
 (4) Noel
Prerequisites: Political Science 225 or equivalent plus undergraduate or graduate work in area studies and/or substantive foreign policy studies.

277. Seminar in American Foreign Policy
 (4) Hanrieder

278. Seminar in Comparative Foreign Policy
 (4) Hanrieder

279. Seminar in Chinese Foreign Policy
 (4) Liu

280A-B. Seminar in Soviet Studies
 (4-4) Staff
Prerequisites: Political Science 230 or equivalent for 280A; Political Science 280A or equivalent for 280B.

281. Seminar in Comparative Communist Systems
 (4) Staff
Prerequisite: consent of instructor.

282A-B. Seminar in Latin American Governments
 (4-4) Staff

283A-B. Seminar in Western European Politics
 (4-4) Merkl

284. Seminar in Politics and Socioeconomic Change
 (4) Nash
Prerequisite: graudate standing.

285. Seminar in Chinese Politics
 (4) Liu

286. Seminar in Japanese Politics
 (4) Fukui

287. African Politics and Public Policy
 (4) Keller
 Critical examination of the leading theoretical and substantive issues on African politics and public policy from a broad comparative perspective. Particular attention is given to development policy and administration.

288. Seminar in Revolution and Violence
 (4) Staff
Prerequisite: graduate standing or consent of instructor.
 A critical examination of the theory and practice of revolution and political violence.

289. Seminar in Political Development

(4) Fukui

*Prerequisite: graduate standing.***290. Seminar in the Study of Public Administration**

(4) Moore

291. Seminar in Public Administration and Public Policy

(4) Moore, Wyner

*Prerequisite: graduate standing.***294. Public Policy and Administration of Natural Resources and the Environment**

(4) Mann

295. Urban Policy and Administration

(4) Cicin-Sain, Wyner

297. Seminar in Analysis of Public Policy

(4) Woolley

298. Marine Policy Seminar

(4) Cicin-Sain

*Prerequisites: graduate standing; undergraduate by special permission.***299A-B. Internship**

(4-4) Staff

*Prerequisite: enrollment in the internship option (plan III) for the M.A. in political science. A total of eight units of credit are given for academic work associated with an internship. First quarter graded in-progress; second quarter a letter grade given.**A substantial paper reporting on the internship or an associated policy problem is required.***500. Practicum for Teaching Assistants**

(2-4) Staff

*No unit credit allowed toward advanced degree.***501. Teaching Assistant Training**

(2) Staff

*No unit credit allowed toward advanced degree.***502. Practicum for Teaching Associates**

(2-4) Staff

*No unit credit allowed toward advanced degree.***503. Directed Research**

(2-4) Staff

504. Supervised Internship in Public Policy

(2-8) Staff

593. Public Policy Internship

(4-8) Staff

*Prerequisites: at least two quarters of graduate work at UCSB.***594. Special Topics**

(1-4) Staff

*Special seminar on research subjects of current interest.***595. Group Studies**

(1-4) Staff

*Critical review of research in selected fields.***596AA-ZZ. Directed Reading and Research**

(2-6) Staff

597AA-ZZ. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations

(1-12) Staff

*No unit credit allowed toward advanced degree.***598AA-ZZ. Master's Thesis Research and Preparation**

(1-12) Staff

*No unit credit allowed toward advanced degree.***599AA-ZZ. Ph.D. Dissertation Research Preparation**

(1-12) Staff

Psychology

Department of Psychology, Psychology Building 1332; Telephone (805) 961-2791. Department Chair: Gerald S. Blum.**Faculty**Susan M. Andersen, Ph.D., Stanford University, Assistant Professor (*personality and social processes, self-theory, sex roles, psychopathology*)F. Gregory Ashby, Ph.D., Purdue University, Assistant Professor (*perceptual and cognitive processes, mathematical psychology*)Gerald S. Blum, Ph.D., Stanford University, Professor (*cognitive and affective processes, experimental psychodynamics, hypnosis*)Daphne B. Bugental, Ph.D., UC Los Angeles, Professor (*social and personality development, interpersonal communication of affect*)Harry J. Carlisle, Ph.D., University of Washington, Professor (*physiology of motivation; regulation of hunger, thirst, and temperature*)John W. Cotton, Ph.D., Indiana University, Professor (*mathematical learning theory, computer simulation of psychological processes, experimental design*)Aaron Ettenberg, Ph.D., McGill University, Assistant Professor (*behavioral neuroscience, psychopharmacology, animal learning*)John M. Foley, Ph.D., Columbia University, Professor (*visual perception, cognitive processes*)Walter C. Gogel, Ph.D., University of Chicago, Professor (*visual perception, psychophysics, perceptual development*)

Robert M. Gottsdanker, Ph.D., UC Berkeley, Professor Emeritus

David L. Hamilton, Ph.D., University of Illinois, Professor (*social cognition, stereotypes, person perception, interracial behavior*)Jerry W. Higgins, Ph.D., University of Michigan, Senior Lecturer with Security of Employment (*personality and psychopathology*)Hsiu-Zu Ho, Ph.D., University of Colorado, Assistant Professor (*behavioral genetics, biological influences on normal behavioral development, genetic aspects of developmental disorders*)Gerald H. Jacobs, Ph.D., Indiana University, Professor (*visual system electrophysiology, comparative vision*)Howard H. Kendler, Ph.D., University of Iowa, Professor (*philosophy and history of psychology, theoretical psychology, conceptual development*)Tracy S. Kendler, Ph.D., University of Iowa, Professor (*cognitive development*)Roberta L. Klatzky, Ph.D., Stanford University, Professor (*cognitive processes, memory and language*)Jack M. Loomis, Ph.D., University of Michigan, Associate Professor (*tactual perception, visual perception*)Elijah P. Lovejoy, Ph.D., University of Pennsylvania, Lecturer with Security of Employment (*intercultural psychology*)Loy D. Lytle, Ph.D., Princeton University, Professor (*developmental psychopharmacology and neurobiology; nutrition, brain function, and behavior; neurochemistry*)Diane M. Mackie, Ph.D., Princeton University, Assistant Professor (*attitudes and attitude change, social perception, group processes*)Richard E. Mayer, Ph.D., University of Michigan, Professor (*human learning and problem-solving*)Charles G. McClintock, Ph.D., University of Michigan, Professor (*social values, development, and exchange*)David M. Messick, Ph.D., University of North Carolina, Professor (*social psychology, decision making*)Russell Revlin, Ph.D., Carnegie-Mellon University, Associate Professor (*reasoning, psycholinguistics, cognitive processes*)Robert W. Reynolds, Ph.D., University of Buffalo, Professor (*physiology, biochemistry, and endocrinology of motivation and emotion*)A. Robert Sherman, Ph.D., Yale University, Senior Lecturer with Security of Employment (*behavioral psychotherapy*)Prentice Starkey, Ph.D., University of Texas at Austin, Assistant Professor (*cognitive development, infant perception and cognition, mathematical cognition*)**Affiliated Faculty**Susan R. Goldman, Ph.D., University of Pittsburgh, Associate Professor (*language and cognitive development, discourse processing, reasoning and problem solving*)James W. Pellegrino, Ph.D., University of Colorado, Professor (*human memory, information processing, cognitive development*)

The psychology curriculum at UCSB is designed to provide students with an appreciation of the scientific study of behavior. Psychology represents an extremely broad discipline, ranging from the study of behavior of the simplest organisms to the behavior of humans and groups of humans in complicated situations.

Students interested in one of the psychology majors are urged to examine the upper-division course offerings to see if these are consonant with their interests in psychology. As students will note, courses dealing with humanistic psychology are not included in the UCSB psychology curriculum, nor does the department have a training program in the clinical applications of psychology.

On the undergraduate level, the department offers the B.A. degree in psychology, with three optional, unofficial concentrations: the concentration in developmental psychology, the concentration in human information processing, and the concentration in personality and psychopathology; and the B.S. in biopsychology. Completion of one of the concentrations is voluntary and will not be formally acknowledged on the student's official transcripts or diploma. On the graduate level, the department offers the M.A. and Ph.D. degrees in psychology.

The departmental advisers, including academic peer advisers, a staff undergraduate adviser, and faculty advisers provide students with academic information and advice as well as assistance with career and graduate school preparation. Students are encouraged to become acquainted with faculty members and to consult with them about programs or academic plans.

Psychology majors are encouraged to join Psi Chi, the Santa Barbara chapter of the National Honor Society in Psychology. Membership information is available from the peer advisers.

After completing specific prerequisites, students with a bachelor's degree in psychology are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Psychology

The major in psychology is recommended for students interested in obtaining a liberal arts education and understanding contemporary issues in psychology. The requirements for this major can be fulfilled with a variety of courses, so that students may choose to specialize in a given substantive area, or select a broader, more varied set of courses. Students in this major who plan to enroll in graduate programs should consult an adviser.

Students who complete the psychology major enter a variety of careers and graduate programs including business administration, law, recreation, social work, education, counseling, clinical psychology, and industrial psychology. It is important to keep in mind that many of these professional careers require training beyond the undergraduate level and students with such interests should discuss their plans with an adviser as early as possible.

Admission to the psychology major is contingent upon successful completion of several requirements (see section on "Preparation for the Major" below). Before these preparatory requirements are completed, students should declare a pre-psychology major. Upon successful completion of these requirements, students then petition for admission to full major status, generally prior to the completion of 130 units. Admission to pre-major status does not guarantee admission to major status.

Preparation for the major. Students must complete each of the following requirements before petitioning the department to change from pre-major to major status: (1) Psychology 1, 5 (or P/STAT 5), and 7; (2) Mathematics 1 or 1M or 1S (for workload credit only) or the equivalent (two years of high school algebra with at least "C" grades will fulfill this requirement); (3) one science course from either Biology 20, 23, 26 or 28; Chemistry 25; Physics 10; Zoology 25 or 40; Natural Science 1A, 1B, or 1C; (4) Psychology 1, 5 (or P/STAT 5), and 7 and the science requirement (number 3 above) must be completed with a combined grade-point average in these four courses of 2.5 or better. In completing the five preparatory courses described above, students must meet the following criteria: (a) in no preparatory course can there be a grade lower than C-; (b) a grade of C- cannot be obtained in more than one of the five preparatory courses; and (c) none of the preparatory courses can be taken passed/not passed.

Students who fail to meet the GPA criterion listed in number 4 above may re-apply for major status after completing a minimum of 12 additional units while maintaining a cumulative GPA of 2.5 or higher. All the remaining criteria must still be met.

Upper-division major. Thirty-six upper-division psychology units are required, including 16 units distributed as follows, plus 20 units of upper-division psychology electives (except 101). A maximum of only 12 units may be taken from courses numbered 102-109. Students interested in pursuing research-oriented graduate study in psychology should choose upper-division

courses from among those designated with an asterisk (*), when such an option exists, and should complete two laboratory courses from 110L; 113L; 116L; 117L; 119L; 112L or 114L.

At least one course from four of the following five areas:

- A. Perception and Performance: 107, 110A,* 110B,* 118A,* or 136*
- B. Cognition: 108, 117,* 118B,* 118C,* 127,* or 128*
- C. Biopsychology: 106, 113A,* 113B,* or 116*
- D. Developmental Psychology: 105 or 119*
- E. Social Psychology: 102; or Personality: 103 or 114*

OPTIONAL CONCENTRATIONS FOR STUDENTS IN THE PSYCHOLOGY MAJOR

Students in the psychology major may elect to complete one of the following three unofficial concentrations by completing specific courses as part of or in addition to the basic requirements for psychology majors. Completion of these options is voluntary and will be acknowledged, on request, by the Department of Psychology. They will not appear, however, on the student's official transcript or diploma.

1. Developmental Psychology

The concentration in developmental psychology is designed for students who are primarily interested in developmental processes and plan a career working directly with children or adolescents. Required courses include those that provide an understanding of general psychological theory and methodology (perception and performance, cognition, biopsychology, and social psychology/personality) as well as courses concerned with various developmental processes. The program also includes developmental research experience and intensive practicum experience in which students act as interns in community settings that provide educational or clinical services to children. Students completing the concentration in developmental psychology may find careers in community mental health agencies, the juvenile justice system, or governmental or private agencies providing services to children. The program provides preparation for specialized graduate or health sciences training (credential, M.A., Ph.D.) in fields pertaining to children. With the completion of specialized graduate programs, careers in special education, elementary and secondary education, counseling, child clinical psychology, and academic developmental psychology are possible.

Preparation for the concentration. Refer to the preparation for the major requirements described above for the psychology major.

Upper-division concentration. Forty upper-division units (with no more than 12 units from courses numbered 102-109) are required, distributed as follows:

- A. Psychology 119 (to be taken in fall of junior year, if possible).
- B. One course from each of three of the following four areas: Psychology 110A, 110B, or 118A (perception and performance); Psychology 108, 117, 118B, 127, or 128 (cognition); Psychology 106 or 113A (biopsychology); Psychology 102 or 114 (social psychology/personality).
- C. Two of the following courses: Psychology 116, 121, 138, 150, 151, or additional courses from group B (above).
- D. Two of the following courses: Psychology 141, 142, 143, 147, or 149.

- E. Two courses from one of the following three groups: 142P and 142S (to be taken concurrently); or 143P and 143S (to be taken concurrently); or Psychology 119L and either 197H, 198, 199, or an additional course from group C (above).

2. Human Information Processing

The concentration in human information processing consists of an integrated program of courses focused on the structure and function of the human mind as it is known through psychological research. The emphasis of the concentration is on the psychology of the normal human adult. The courses are concerned with the basic psychological processes of perceiving, learning, remembering, thinking, communicating, and performing. Central to the concentration is a three-quarter integrated sequence of courses concerned with these processes, which students will normally take during their junior year.

The concentration in human information processing is intended for students who want to pursue cognitive processes in depth. It will provide a good background for graduate study in all areas of psychology except biopsychology, and it is particularly well suited to those planning careers in teaching. The concentration will also prepare students to go directly into careers in the rapidly growing information processing sector of business and industry.

Preparation for the concentration. In addition to the preparation for the major requirements described above for the psychology major, students who plan a concentration in human information processing must also complete a course from Computer Science 5AA-ZZ.

Upper-division concentration. Thirty-seven upper-division units are required, distributed as follows, with no more than 12 units taken from courses numbered 102-109. Students interested in pursuing research-oriented graduate study in psychology should choose their upper-division courses from among those designated with an asterisk (*) when such an option exists. In addition, they must complete both Psychology 110L and 117L, or 110L or 117L and one other laboratory course from among Psychology 112L, 113L, 114L, 116L, or 119L.

- A. Psychology 118A-B-C
- B. One course from each of two of the following three areas: Psychology 106, 113A*, 113B*, or 116* (biopsychology); Psychology 105 or 119* (developmental psychology); Psychology 102, 103, or 114* (social psychology, personality)
- C. Psychology 110L or 117L
- D. One course from each of the following three groups: Psychology 110A, 110B, or 136 (perceptual/motor skills); Psychology 117, 127, or 128 (cognitive processes); Psychology 120, 150, or 151 (qualitative/modeling approaches to cognition and perception)

3. Personality and Psychopathology

The concentration in personality and psychopathology is intended for students in the psychology major with particular interests in personality psychology, abnormal psychology, and related areas. It is also designed to accommodate those preparing for advanced training in such fields as clinical psychology, counseling, and social work.

Through an appropriate selection of courses, students can tailor the concentration to fulfill personal interests and objectives. For example, the concentration provides sufficient flexibility to accommodate students planning to pursue psychology graduate training at the Ph.D. level, who would be advised to acquire ample research

experience through the selection of laboratory or independent research course alternatives. Students whose educational objectives are limited to the B.A. degree or to a professionally oriented master's program could likewise choose courses consistent with their academic and vocational goals.

Preparation for the concentration. See the preparation for the major requirements described above for the psychology major.

Upper-division concentration. Forty-five upper-division units are required, including at least 37 upper-division units in psychology distributed as follows, with no more than 12 units taken from courses numbered 102-109. Students interested in pursuing research-oriented graduate study in psychology should choose their upper-division courses from among those designated with an asterisk (*), when such an option exists, and should complete two laboratory courses from 110L; 113L; 116L; 117L; 119L; 112L or 114L.

- A. Psychology 103
- B. Psychology 114
- C. Psychology 114L or 112L
- D. Psychology 129 or 131
- E. One course from each of three of the following four areas: Psychology 107, 110A,* 110B,* 118A,* 136* (perception and performance); Psychology 108, 117,* 118B,* 118C,* 127,* or 128* (cognition); Psychology 106, 113A*, 113B*, or 116* (biopsychology); Psychology 105 or 119* (developmental psychology)
- F. At least 16 upper-division units from among the following courses not already taken to satisfy other concentration requirements. At least eight of these units must be from psychology. Anthropology 107, 166; Education 165; Philosophy 193; Psychology 112L, 113L, 114L, 117L, 119L, 121, 129, 131, 135A-B-C, 150, 197H, 198, 199; Sociology 170, 171; Speech 166, 195

Bachelor of Science — Biopsychology

The biopsychology major is designed for students interested in an intensive study of the relationship between brain function and behavior. The required courses involve a study of neurophysiology and neuroanatomy; biochemical, endocrine, and pharmacological regulations in the central nervous system; and the behavioral and psychological data related to these topics. The major is recommended for students planning a career in laboratory research (as laboratory technicians, research assistants, etc.) or in health-related sciences (requiring graduate work leading to the M.D. or Ph.D. degrees, for example).

Preparation for the major. The following courses or their equivalents are required: Psychology 1 (or 101 for upper-division students); Psychology 7; Biology 26 or 28, or 11A and 11B, or Zoology 40 and 40L; Chemistry 1A-AL, B-BL, C-CL, (or 2A-B-C), 6A-B, 8A-B; Physics 6A-AL, B-BL, C-CL; Mathematics 34A-B, and either Psychology 5 or P/STAT 5 or 33 (eight units of Mathematics 34S will equal 34A-B).

Note: Psychology 106 is recommended for lower-division students who wish to enter the major. However, it may not be taken after or concurrently with Psychology 113A.

Upper-division major. Forty-six upper-division units are required, distributed as follows: Psychology 113A, 113B, 132, 133A and 137; one course from the following: Psychology 110A, 110B, or 116; two courses from the following:

Psychology 110L, 113L* or 116L; and 12 units of upper-division psychology electives (except 101).

*Students interested in pursuing a graduate education in biopsychology upon completion of the major are strongly advised to enroll in Psychology 113L as one of their two lab course requirements.

Passed/Not Passed Option Within the Major

Psychology majors are permitted to take a maximum of eight units from the following courses on a passed/not passed basis to fulfill the major requirements for any of the psychology majors: Psychology 135A-B-C, 142P-143P, 190AA-ZZ, 197H, 198, 199. Students who wish to take more than eight units of the above courses or any other psychology courses on a passed/not passed basis may do so. However, such courses will not apply to the major requirements.

Undergraduate Honors Program

The Department of Psychology has recently implemented a new four-year honors program to augment the existing program in the College of Letters and Science. Enrollment in the psychology honors program (which requires participation in the College of Letters and Science Honors Program) is by petition to the department and is based upon academic achievement.

Students who are selected for participation will earn a wide variety of unique academic privileges. In addition to special honors seminar courses, honors students will be given extended library privileges, increased priority for class registration, and opportunities to enroll in graduate seminars.

The College of Letters and Science operates an honors student lounge, publishes an honors student newsletter, and organizes a number of social and academic events throughout the year, especially for honors students. The departmental program augments that of the college by giving gifted students an opportunity for an in-depth and intellectually challenging study of psychology. The psychology honors classes, for example, will be restricted in size and will provide a level of discussion and participation not possible in traditional lecture classes. In addition, to help prepare for graduate training, honors students will conduct independent research under the supervision of a faculty adviser. The results of this research will form the basis of the honors thesis, which each student will be required to submit before the end of the senior year.

Students interested in applying for participation in the psychology honors program, or desiring further information, should see the Department of Psychology's undergraduate adviser.

GRADUATE PROGRAM

Graduate training is provided in biopsychology; human information processing, and social-personality psychology.

Admission

The major graduate program of the Department of Psychology consists of work leading to the Ph.D. degree. However, the M.A. degree is also awarded, either optionally to students admitted to the Ph.D. program or to those admitted to a terminal M.A. program. Applicants for admission to graduate study may choose either the Ph.D. or the terminal M.A. program. Admissions are made only for the fall quarter of any year. Requests for application materials will not be processed if received after January 10. The deadline for receipt of all application materials is February 1.

In addition to fulfilling the general requirements for admission to graduate status, the student must submit evidence of acceptable performance on two selection tests: (1) the verbal, quantitative, and analytic portions of the Aptitude Test of the Graduate Record Examination, and (2) the Graduate Record Examination in Psychology. Results of these examinations should be sent directly to the Department of Psychology. Normally, those admitted will have an undergraduate major in psychology. However, outstanding students who have majored in other areas are encouraged to apply.

Master of Arts — Psychology

Degree Requirements

Work toward the M.A. degree is optional for applicants admitted to the Ph.D. program. The optional M.A. degree is available under Plan 1 (thesis), or Plan 2 (comprehensive examination). Either plan also requires satisfactory performance in core courses and research courses with an acceptable short paper completed during the first year, summarizing the progress made in the research.

Students enrolled in the terminal M.A. program must satisfy the following two requirements: (1) completion of 48 units of graduate course work, and (2) preparation of an acceptable thesis. For the full-time student, at least four quarters of work must be completed before the M.A. degree will be awarded. For the part-time student, all work toward the terminal M.A. degree should be completed no more than three years after admission.

Neither acceptance into nor successful completion of the terminal M.A. program will automatically provide admission into the Ph.D. program.

Doctor of Philosophy — Psychology

Degree Requirements

Students enrolled in the Ph.D. program must satisfy the following departmental requirements: (a) doctoral-level performance in six appropriate core courses, other graded non-research courses, and graded research courses, (b) satisfactory performance in ten approved courses beyond the six core courses, (c) satisfactory completion of a research paper equivalent to a master's thesis, (d) successful performance on a general candidacy examination, a specialty candidacy examination or paper, and a preliminary oral examination, (e) completion of an acceptable doctoral dissertation and acceptable performance on the doctoral oral qualifying examination, (f) satisfactory service as a teaching assistant.

PSYCHOLOGY COURSES

LOWER DIVISION

These courses act as prerequisites for the majority of upper-division requirements and should be completed as early as possible.

1. General Psychology

(4)

The requirements of the course will include subject participation in low-risk psychological experiments or completion of a short paper.

An introduction to the subject matter and methods of psychology including the physiological basis of behavior, learning and memory, perception and cognition, social behavior and personality. (F,W,S,SS)

5. Analysis of Data in Psychology

(5)

Prerequisite: Mathematics 1 or equivalent. This course is the same as PSTAT 5.

Elementary statistical inference, including the sign test, z test, t test, correlation, and chi square test. Simple descriptive statistics. The logic of statistical inference, including the central limit theorem and discussion of sampling distributions. (Not offered 1987-88; see PSTAT 5.)

7. Introduction to Experimental Psychology

(5)

Prerequisites: Psychology 1 and 5 (or PSTAT 5). Prepsychology major or biospsychology major status, or consent of instructor.

Introduction to the planning and execution of experiments in psychology and to the analysis and interpretation of data. (F,W,S,SS)

90A. First-Level Honors Seminar

(2)

Prerequisites: instructor approval is required. Students must be concurrently enrolled in Psychology 1.

Seminar for specially selected students. Advanced reading, writing, and discussion concerning topics raised in Psychology 1.

90B. First-Level Honors Seminar

(2)

Prerequisites: instructor approval is required. Students must be concurrently enrolled in Psychology 5 or PSTAT 5. Students who completed Psychology 90A have priority for enrollment.

Seminar for specially selected students. Advanced reading, writing, and discussion concerning topics raised in those courses.

90C. First-Level Honors Seminar

(2)

Prerequisites: instructor approval is required. Students must be concurrently enrolled in Psychology 7. Students who have just completed Psychology 90B have priority for enrollment.

Seminar for specially selected students. Advanced reading, writing, and discussion concerning topics raised in Psychology 7.

91A-B-C. Second-Level Honors Seminar

(2-2-2) Staff

Prerequisites: open to psychology honors students with consent of instructor.

An advanced seminar designed exclusively for honors students in the major. The course will involve reading and discussion of selected topics in psychology.

UPPER DIVISION

Group I: Courses in this category are general survey courses. Although they count as upper-division courses for credit toward the major, they are generally not intended for students who are advanced majors. Psychology majors are encouraged to take the more advanced courses numbered 110 and above whenever possible. Psychology 105, 107, and 108 are elementary survey courses which have advanced level counterparts. Psychology majors planning to pursue interests in these areas are advised not to take these courses prior to the advanced level courses.

101. Principles of Psychology

(4)

Open to upper-division students who do not have credit in Psychology 1. May be offered in substitution for Psychology 1, but does not fulfill upper-division major requirements. May not be taken after Psychology 1. The requirements of

the course will include subject participation in low-risk psychological experiments or completion of a short paper.

An introduction to scientific psychology. Coverage will include such topics as sensation, perception, learning, motivation, memory, language, cognitive processes, individual differences, frustration and conflict, personality, behavior, pathology, and social behavior. (Not offered 1987-88.)

102. Social Aspects of Behavior

(4)

Prerequisite: open only to students who have completed at least one lower-division course in psychology, or six terms of college work.

An introduction to social psychology including person perception, attitude formation and change, interpersonal interactions, persuasion and influence, group processes, and social values.

103. The Abnormal Personality

(4)

Prerequisite: open only to students who have completed at least one lower-division course in psychology, or six terms of college work.

Analysis of disorders with psychogenic components, including neuroses, anxiety states, character disorders, psychosomatic illness, and psychoses.

105. Introduction to Child Psychology

(4)

Not recommended if student intends to take Psychology 119. May not be taken concurrently with or after Psychology 119. Open only to students who have completed at least one lower-division course in psychology or six terms of college work.

An introduction to the scientific study of children and their development. Basic research and theory in major areas of child psychology will be examined.

106. Brain and Behavior

(4)

May not be taken concurrently with or after Psychology 113A, 113B, or 113L. Open only to students who have completed at least one lower-division course in psychology, or six terms of college work.

An examination of contemporary research and theory dealing with the relation between the brain and psychological variables.

107. Introduction to Perception

(4)

Not recommended if student intends to take either Psychology 110A, 110B, or 118A. May not be taken concurrently with or after Psychology 110A, 110B, 110L, or 118A. Open only to students who have completed at least one lower-division course in psychology, or six terms of college work.

An elementary course in perception in which the basic phenomena are demonstrated and their interpretations and implications considered.

108. Learning and Memory

(4)

Not recommended if student intends to take either Psychology 117 or 118B. May not be taken concurrently with or after Psychology 117 or 118B. Open to students who have completed at least one lower-division course in psychology, or six terms of college work.

The methods by which humans process, store, and retrieve information.

109. Applied Social Psychology

(4)

Prerequisite: Psychology 102.

This course is concerned with the affective, cognitive, motivational, and behavioral aspects of

interpersonal functioning in social groups and organizations. Social psychological theories will be applied to social processes within educational, work, family, health care, and community settings.

Group II: This category includes advanced laboratory and lecture courses.

110A. Perception

(4)

Prerequisites: Psychology 1, 5, and 7.

The role of organizational processes, cue systems, and learning in the perception of object characteristics such as color, form, size, orientation, and distance.

110B. Perception

(4)

Prerequisites: Psychology 1, 5, and 7.

The examination of sensory processes and the application of psychophysical methodology to study the response to sensory information.

110L. Laboratory in Perception

(5)

Prerequisites: Psychology 1, 5, and 7, and either 107 or 110A or 110B, or 118A.

A laboratory course emphasizing the formulation and testing of experimental hypotheses in perception as related to problems selected by the student to be of special interest to him/her.

112L. Laboratory in Social Behavior

(5)

Prerequisites: Psychology 1, 5, 7 and 102.

Lecture and laboratory.

Methods, techniques, and typical experimental research in social psychology.

113A. Physiological Psychology

(4)

Prerequisites: Biology 26 or 28, or Biology 11A and 11B, or Zoology 40 and 40L, or equivalent; Chemistry 25 or equivalent; Psychology 1, 5, and 7; or consent of instructor. Psychology 106 is recommended.

The physiological mechanisms of behavior; emphasis on neuronal and synaptic mechanisms.

113B. Physiological Psychology

(4)

Prerequisite: Psychology 113A or consent of instructor.

The physiological mechanisms of behavior; emphasis on central integration of complex behaviors.

113L. Laboratory in Physiological Psychology

(5)

Prerequisites: Psychology 113A and 113B.

Lecture and laboratory.

A study of the techniques and experimentation in physiological psychology.

114. Personality

(4)

Prerequisites: Psychology 1, 5, and 7 or consent of instructor.

An introduction to theories of personality (e.g., psychodynamic, existential, humanistic, and social learning theories) with special attention to normal/abnormal development, the role of life situations in shaping personality, and to related experimental research.

114L. Laboratory in Personality

(5)

Prerequisites: Psychology 1, 5, 7 and 114.

Topics of current interest in personality with concurrent experimentation, analysis of data, and preparation of laboratory reports.

116. Conditioning and Learning

(4)

Prerequisites: Psychology 1, 5, and 7.

Principles of instrumental and classical conditioning. Topics may include: avoidance learning, stimulus generalization, discrimination, and other aspects of learning by animals and humans.

116L. Laboratory in Animal Learning

(5)

Prerequisites: Psychology 1, 5, 7. May be taken concurrently with Psychology 116.

Methods, techniques, and typical experimental research in animal learning.

117. Human Learning

(4)

Prerequisites: Psychology 1, 5, and 7.

Principles of human learning, memory, and cognition. Topics may include: concept formation, skill learning, verbal learning, memory for meaning, and other cognitive processes.

117L. Laboratory in Human Learning

(5)

Prerequisites: Psychology 1, 5, 7. May be taken concurrently with Psychology 117 or 118C.

Methods, techniques, and typical experimental research in human learning.

118A. Human Information Processing

(4)

Prerequisites: Psychology 1, 5, 7. Psychology 107 and 108 are not recommended if student intends to take the 118A-B-C series.

This is the first quarter of an integrated three-quarter sequence of courses concerned with the phenomena of information processing in normal adult humans and the structures and processes that underlie these phenomena. Concerned primarily with sensing, perceiving, and recognizing.

118B. Human Information Processing

(4)

Prerequisites: Psychology 1, 5, 7, and 118A. Psychology 107 and 108 are not recommended if student intends to take the 118A-B-C series.

Focuses on memory and language. The principle topics include: the internal representation of knowledge in general and of language, the 'architecture' of the human information processing system, the processes involved in remembering and in language production and comprehension.

118C. Human Information Processing

(4)

Prerequisites: Psychology 1, 5, 7, and 118B. Psychology 107 and 108 are not recommended if student intends to take the 118A-B-C series.

The third quarter of the 118A-B-C series. Concerned with complex, high-level information processing. Among the phenomena considered are problem solving, concept formation, deductive reason, and thinking. Mathematical and computer approaches to these phenomena are included.

119. Developmental Psychology

(4)

Prerequisites: Psychology 1, 5, and 7.

Analysis of the influence of developmental processes on behavior.

119L. Laboratory in Developmental Psychology

(5)

Prerequisites: Psychology 1, 5, 7, 119.

A laboratory course emphasizing the methods, techniques, and typical experimental research in developmental psychology.

Group III and Group IV: Courses in these categories are designed for the advanced student

with special interests in substantive and theoretical areas of psychology.

120. Formal Models in Psychology

(4)

Prerequisites: Psychology 1, 5, 7, and Mathematics 1 or equivalent. Upper-division major or consent of instructor.

An analysis of selected mathematical and computer models of psychological processes with consideration given to the value and weakness of such theories in understanding behavior.

121. Psychological Measurement

(4)

Prerequisites: Psychology 1, 5, and 7. Upper-division major or consent of instructor.

Consideration both of the theoretical foundations of psychological measurement, including problems of reliability, validity, norms, and prediction, and of the techniques by which aptitude, achievement, and personality tests are constructed and evaluated.

122. Motivation

(4)

Prerequisites: Psychology 1, 5, and 7. Upper-division major or consent of instructor.

This course examines the evolution of ideas concerning the determinants of human and animal behavior. Historical and contemporary theories of motivation will be presented and evaluated in the light of recent research findings.

126. Historical Foundations of Modern Psychology

(4)

Prerequisite: Psychology 1, 5, and 7, and consent of instructor.

An analysis of the epistemological bases of the discipline of psychology combined with a historical review of its development followed by a description of the current status of the field.

127. Psychology of Language

(4)

Prerequisites: Psychology 1, 5, and 7. Upper-division major or consent of instructor.

This psychological nature of linguistic theory; linguistic structure as a factor in learning, perception, and comprehension; language acquisition; multilingualism; models of language.

128. Human Thinking and Problem Solving

(4)

Prerequisites: Psychology 1, 5, and 7. Upper-division major or consent of instructor.

An examination of theories and supporting evidence regarding the nature of human thought processes.

129. Behavioral Approaches to Psychotherapy

(4)

Prerequisite: Psychology 1, 5, 7, and either 103 or 114. Upper-division major or consent of instructor.

An introduction to the basic principles and methods of behavior modification, including desensitization, operant conditioning, social modeling, expressive training, and aversion therapy. Related discussion concerning the identification of maladaptive behavior, the specification of treatment operations, and the criteria for assessing therapeutic change.

130. Visual System Analysis

(4)

Prerequisites: open to upper-division students only. Mathematics 3A or 7A or 34A or consent of instructor. Open to non-majors.

A systems approach to vision emphasizing quantitative descriptions and models. Topics will include pattern, color, and visual space perception.

This course should also be of interest to students in engineering and in the physical, biological, and cognitive sciences.

131. Psychodynamic Approaches to Psychotherapy

(4)

Prerequisites: Psychology 1, 5, 7, and either 103 or 114. Upper-division major or consent of instructor.

An introduction to the basic concepts of psychodynamically oriented psychotherapy. Particular emphasis is directed toward the traditional psychoanalytic, as well as the Neo-Freudian approaches to the treatment of maladaptive behavior patterns. (Not offered 1987-88.)

132. Sensory Processes

(4)

Prerequisites: Biology 26 or 28, or Biology 11A and 11B, or Zoology 40 and 40L, or equivalent; Psychology 1, 5, and 7, and 106 or 113A; or consent of instructor. Upper-division major or consent of instructor.

Physiological and psychophysical approaches to the study of sensory systems.

133A. Psychopharmacology

(4)

Prerequisites: Biology 26 or 28, or Biology 11A and 11B, or Zoology 40 and 40L or equivalent; Chemistry 25 or equivalent; Psychology 1, 5, and 7; Psychology 113A or Biology 105; or consent of instructor.

An examination of the neuroanatomical and neurochemical substrates for psychoactive drug action. Emphasis will be placed on achieving an understanding of the various ways in which drugs alter neurotransmission among cells in the central and peripheral nervous system.

133B. Psychopharmacology

(4)

Prerequisite: Psychology 133A or consent of instructor.

An examination of the mechanisms by which drugs alter physiological and behavioral responses in mammals. Emphasis will be placed on understanding the actions of psychoactive drugs in terms of their effects on known neuroanatomical and neurochemical mechanisms involved in behavioral states such as sleep and waking, nociception, mental diseases, and consummatory behavior.

134. Cooperation, Competition, and Conflict

(4)

Prerequisites: Psychology 1, 5, 7, and 102.

Upper-division major or consent of instructor. A study of the psychological and social psychological bases of intragroup and intergroup cooperation, competition, and conflict in animal and human behavior.

135A-B-C. Field Experience in Psychological Settings

(4-4-4)

Prerequisites: Psychology 1, 5, 7, and either Psychology 103 or 114 or 129, major with senior standing, and consent of instructor.

Upper-division major or consent of instructor. The student must take Psychology 135A and 135B in sequence, while continuation in Psychology 135C is optional. Since enrollment is limited, interested students are advised to contact the instructor at least several weeks in advance of the fall quarter.

Supervised field experience in settings providing psychological services with opportunities for observation and participation. Students will spend approximately six hours per week in psychological settings, attend weekly class meetings, read related material, and prepare written reports. (F,W,S)

136. The Psychology of Skill

(4)

Prerequisites: Psychology 1, 5, 7, junior or senior psychology major, or consent of instructor.

An analysis of motor coordination and information-processing skills from the points of view of underlying mechanisms, acquisition, and individual differences. (Not offered 1987-88.)

137. Hormones, Brain Function, and Behavior

(4)

Prerequisites: Biology 26 or 28, or Biology 11A and 11B, or Zoology 40 and 40L or equivalent; Chemistry 25 or equivalent. Psychology 113A or Biology 105; or consent of instructor. Upper-division major or consent of instructor.
The role of hormones in the regulation of behavior. (Not offered 1987-88.)

138. Interpersonal Processes

(4)

Prerequisites: Psychology 1, 5, 7, and 102. Upper-division major or consent of instructor.
Review of research and theory in social perception and social cognition, emphasizing the role of cognitive processes in impression formation, attribution theory, social judgements, and stereotyping.

139. Psychology of Sex Differences

(4)

Prerequisites: Psychology 1, 5, and 7.
The nature of sex differences will be studied from the viewpoint of psychology. Critical issues include: What sex differences have been demonstrated to exist? What are the underlying causes (e.g., biology, socialization) of existing sex differences?

140. Social Influence

(4)

Prerequisites: Psychology 1, 5, 7, and 102. Upper-division major or consent of instructor.
Review of research and theory of social influence with particular emphasis on attitude formation and change through persuasion, compliance, and conformity, and on the relationships among affective, cognitive, and behavioral processes.

141. Perceptual Development

(4)

Prerequisites: Psychology 1, 5, 7, and either Psychology 110A or 110B. Open only to upper-division majors or by consent of instructor.
This course concerns perceptual development from birth to maturity with an emphasis on perceptual learning and development in the human. Such topics as critical periods and the development of space and object perception in the neonate will be considered.

142. Cognitive Development

(4)

Prerequisites: Psychology 1, 5, 7, 119, and either 108, 116, or 117.
An examination of experimental evidence relevant to cognitive development from birth to maturity. Human development will be emphasized, although some animal research will be examined. The general concept of development will be discussed, and cognitive development will be considered from a number of points of view including learning theory, intelligence testing, linguistic theories, Piaget's theory, and relevant theories of central nervous system development.

142P. Practicum in Learning Disabilities

(5)

Prerequisites: Psychology 142 and concurrent enrollment in Psychology 142S. Open only to senior majors or by consent of instructor. Only five units may be taken in the Psychology 142P-143P series.
Field experience in conjunction with the seminar in learning disabilities. Students will work under the supervision of a special education teacher at a local school four half-days a week. Focus will be on children with disorders in perception, attention, language, learning, memory, or problem solving. Relevant psychological research and theory will be the focus of the accompanying seminar.

142S. Seminar in Learning Disabilities

(3)

Prerequisites: Psychology 142 and concurrent enrollment in Psychology 142P. Open only to senior majors or by consent of instructor. Only three units may be taken in the Psychology 142S-143S series.
Course work in conjunction with the practicum in learning disabilities. A weekly two-hour seminar dealing with psychology research and theory relevant to learning disabilities. Each student will present and write a paper on a relevant topic.

143. Developmental Socialization

(4)

Prerequisites: Psychology 1, 5, 7, 102, and 119.
Social development in infancy and childhood. Biological substrates, environmental sequence, and developmental processes will be discussed in relationship to social behavior.

143P. Practicum in Social Development

(5)

Prerequisites: Psychology 143 and concurrent enrollment in Psychology 143S. Open only to senior majors or by consent of instructor. Only five units may be taken in the Psychology 142P-143P series.
Field experience in conjunction with the seminar in social development. Students will work under the supervision of an appropriate staff member at a local agency four half-days a week. Focus will be on developmental problems.

143S. Seminar in Social Development

(3)

Prerequisites: Psychology 143 and concurrent enrollment in Psychology 143P. Open only to senior majors or by consent of instructor. Only three units may be taken in the Psychology 142S-143S series.
Course work in conjunction with the practicum in social development. A weekly two-hour seminar dealing with social, emotional, and behavioral problems in childhood. Each student will present and write a paper on a relevant topic.

147. Psychology of Adult Aging and Human Abilities

(4)

Prerequisites: Psychology 1, 5, 7, and 119. Upper-division standing.
Changes in psychological abilities attributable to normal adult aging. Included are broadly conceived abilities such as are measured by tests of intelligence. Also included are more specific types of information processing in which perceptual judgements or rapid decisions are made. (Not offered 1987-88.)

149. Introduction to Behavioral Genetics

(4)

Prerequisites: Psychology 1, 5, and 7.
This course will cover historical perspectives on evolution and genetics, basic principles of molecular, population, and quantitative genetics with focus on behavioral phenotypes, specific methods in human and animal behavioral genetics,

and applications of these methods in various behavioral domains. (Not offered 1987-88.)

150. Advanced Analysis of Data in Psychology

(5)

Prerequisites: Psychology 1, 5, and 7. Upper-division major or consent of instructor. Lecture and laboratory.
Application of statistical methods to the design and analysis of psychological investigations and to the interpretation of quantitative data in psychology.

151. Computer Applications in Psychology

(4)

Prerequisites: Psychology 1, 5, 7, and a working knowledge of BASIC. Upper-division major or consent of instructor.
An introduction to the use of computers in psychology. Focus will be on computer control of experiments and computer simulation of psychological processes.

154. Intercultural Psychology

(4)

Prerequisite: enrollment only with consent of instructor. Students with extensive experience or contact with a second culture are especially encouraged to enroll.
Misperceptions, miscommunications, and meaning shifts when people first live in a new culture; intercultural experience as a source of understanding of one's own identity and culture; ethnocentrism of hosts and sojourners; value differences revealed by and produced during intercultural living. (Not offered 1987-88.)

160AA-ZZ. Special Topics in Psychology

(4)

Prerequisites: Psychology 1, 5, 7, and consent of instructor. Course may be repeated once and up to eight units major credit will be given providing letter designations are different.
Lectures in special areas of interest in contemporary psychology. Consult the department office regarding proposed course topics.

190AA-ZZ. Seminars in Psychology

(2)

Prerequisites: Psychology 1, 5, 7, and consent of instructor. Course may be repeated twice and up to six units major credit will be given providing letter designations are different.
Small group seminars in selected areas for advanced undergraduates. Students may suggest seminars to be organized under the direction and sponsorship of faculty members.

196H. Honors Seminar in Psychology

(4)

Prerequisites: Psychology 1, 5, and 7; 16 upper-division units in psychology from UCSB and consent of instructor. Upper-division major or consent of instructor. Students must have a minimum 3.5 overall grade-point average, 3.6 grade-point average in upper-division psychology, and have completed one Group II course. All qualified students will be invited to apply in the psychology office at the end of spring quarter. Students not meeting the minimum requirements may be nominated for admission by a member of the faculty. All final decisions for enrollment will be made by the coordinator of the seminar.
The honors seminar is a series of weekly meetings with individual faculty representing diverse areas within psychology. Background readings are required for each meeting. Full participation in the seminar is required. The honors seminar is offered on a letter-grade basis only.

197H. Honors Research in Psychology
(1-4)

Prerequisites: completion of or concurrent enrollment in Psychology 196H. Open only to upper-division majors. This course repeated twice, and no more than 12 units combined of Psychology 197H, 198, and 199 may be applied toward fulfilling major requirements.

Independent study under supervision of faculty member, involving either design and execution of independent research project or scholarly analysis and critique of theoretical and research literature pertaining to substantive issues. Honors thesis qualifies student for distinction in major upon graduation.

198. Readings in Psychology
(1-4)

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in psychology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Psychology 198 courses are limited to no more than four units in one quarter and no more than 12 units may be applied toward fulfilling the psychology major requirements. Students may apply only 12 units combined of Psychology 197H, 198, and 199 credit toward fulfilling the major requirements. Open only to upper-division majors or by consent of instructor.

Readings in psychology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

199. Independent Research in Psychology
(1-4)

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in psychology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Psychology 199 courses are limited to no more than four units in one quarter and no more than 12 units may be applied toward fulfilling the psychology major requirements. Students may apply only 12 units combined of Psychology 197H, 198, and 199 credit toward fulfilling the major requirements. Open only to upper-division majors or by consent of instructor.

Independent research under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study for their research.

GRADUATE COURSES

Full graduate standing in psychology or consent of instructor is prerequisite to all graduate offerings except 592AA-ZZ.

221A. Design and Measurement
(4)

Experimental design and statistical analysis in psychological research. Includes basic probability, sampling and distribution theory, hypothesis testing, and estimation.

221B. Design and Measurement
(4)

Prerequisite: Psychology 221A or consent of instructor.

Experimental design and statistical analysis in psychological research. Analysis of variance and related topics.

221C. Multivariate Analysis in Psychology and Related Social Sciences
(4)

Prerequisites: Psychology 221A and 221B or consent of instructor.

The use in psychology of the general linear model, multiple regression, discriminant function analysis, factor-analysis, and principle components analysis.

222. Social Psychology and Decision Making
(4)

Examination of conflict and cooperation, group effects on individual performance, subjective probability, choice, and human information processing.

223. Personality
(4)

Structure, development, and dynamics of personality. Consideration of major personality theorists.

224. Learning
(4)

Introduction to contemporary methodological and theoretical developments in the field of learning.

225. Motivation
(4)

Analysis of contemporary theories and models of motivation.

226. Developmental Psychology
(4)

Introduction to contemporary developmental psychology. Although the emphasis is on human development, infrahuman development is included.

227. Human Memory and Cognitive Processes
(4)

Survey of theoretical approaches and empirical findings in the areas of learning, memory, psycholinguistics, and cognitive processing. Topics include structure and process models of memory, nature of the information-processing approach, and related experimental methodology and findings.

228. Perception
(4)

Analysis of psychophysical relations in sensory processes with stress on detection, scaling, discrimination, spatial and temporal resolution, and the interaction of cue systems in perceptual behavior.

229. Physiological Psychology
(4)

Examination of neural and endocrine mechanisms underlying vertebrate motivational systems.

230. Psychophysiology of Vision
(4)

Consideration of the physiological and psychophysical data bearing on the major features of vision in vertebrates.

237. Cognition
(4)

An in-depth analysis of advanced topics in human cognition. The course will include discussion of the cognitive processes involved in areas such as human thinking, problem solving, memory, and learning.

238. Social Cognition
(4)

Review of current research in person perception, social categorization, and social judgment.

242A. Hypnosis as a Research Tool
(4)

Combined lecture-laboratory course on uses of hypnosis as a research tool in diverse fields of psychology. Students participate in screening of hypnotic subjects under supervision, and also design and execute experiments in areas of their own special interest.

242B. Hypnosis as a Research Tool
(4)

Prerequisite: Psychology 242A.

Continued laboratory experience with students carrying out individual projects under supervision. Also discussion of hypnotic experiments growing out of a conceptual model of the mind.

243. Behavior Modification
(4)

Survey of behavior modification procedures and the theories underlying their development. Topics include systematic desensitization and variants thereof, assertive training, drugs, operant conditioning procedures, hypnosis, extinction procedures, and aversive conditioning. Prior familiarity with learning theories required.

244. Psychopathology
(4)

Empirical approaches to understanding the antecedents, processes, and modification of psychopathology.

250. Decisional and Social Processes
(4)

A review of the psychological and social bases of decision making, choice behavior, and various patterns of social interaction.

260. Historical Foundations of Modern Psychology
(4)

An analysis of the epistemological bases of the discipline of psychology combined with a historical review of its development followed by a description of the current status of the field.

261. Conceptual Problems in Psychology
(4)

Analytic techniques of philosophy of science applied to historical and contemporary systems of psychology.

262. Formal Models
(4)

This course concentrates on mathematical models for behavior. Several specific models and programs are discussed in detail, and these formal theories are compared with more informal, verbal theories.

263A. Computer Simulation of Psychological Processes
(4)

An up-to-date review of research on computer simulation of psychological processes. Some of the processes to be considered in detail are thinking, learning, understanding teaching, dialogue, and conflict resolution.

263B. Computer Simulation of Psychological Processes
(4)

Prerequisite: Psychology 263A.

Treatment of additional topics such as those listed under Psychology 263A.

271. Spatial Perception
(4)

An examination of experimental, methodological, and theoretical approaches to the study of the perception of extent and the interaction of spatial and other characteristics in the achievement of a stable visual world.



Grade-schooler Chong Yang shares his homework with his "Best Buddy," UCSB student Peter Hippard. Part of the Isla Vista Youth Project, the "Best Buddies" Program is organized through the Community Affairs Board, which places more than 1,000 UCSB volunteers with community organizations.

285. Cognitive and Motivational Factors in Personality Development

(4)

Prerequisite: Psychology 226 or consent of instructor.

The origins of a few social-motivational systems (e.g., moral, achievement) will be examined from several different theoretical perspectives. The interplay of cognitive and motivational processes will be emphasized, and stage-theoretic and attributional approaches to this problem will be considered.

592AA-ZZ. Special Interest Group Research Seminar

(1)

Research seminar for special interest groups in psychology. Each special interest group has its own letter designation available in department office.

594A-ZZ. Special Topics

(3)

Special seminar on research subjects of current interest. Each faculty member has their own letter designation available in department office.

595. Independent Readings for M.A.

(2-12)

No more than eight units total may be taken toward credit for the M.A.

The purpose of this course is to provide supervised readings on selected topics.

596. Directed Reading and Research

(2-12)

Required of all first-, second-, and third-year psychology graduate students. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in Psychology 596.

The purpose of this course is to provide supervised experience in experimental design and laboratory procedures on selected topics, including

the formulation of experimental problems, discussion of relevant literature, and the analysis and interpretation of experimental results.

597. Individual Study for Ph.D. Examinations

(1-12)

No unit credit allowed toward advanced degree. Preparation for Ph.D. examinations under supervision of chair of student's doctoral committee.

598. Master's Thesis Research and Preparation

(2-12)

No unit credit allowed toward advanced degree. Research and preparation for the master's thesis.

599. Dissertation Research and Preparation

(2-12)

Empirical and theoretical investigations of special problems in psychology in relation to dissertation research.

Religious Studies

Department of Religious Studies, South Hall 4607; Telephone (805) 961-3578. Department Chair: Phillip E. Hammond.

Faculty

D. Mackenzie Brown, Ph.D., Stanford University, Professor Emeritus
 Juan E. Campo, Ph.D., University of Chicago, Assistant Professor (*history of religions, Islam, and Arabic*)
 Walter H. Capps, Ph.D., Yale University, Professor (*religion in western culture*)

W. Richard Comstock, Ph.D., Union Theological Seminary, Professor (*religion in western culture*)

Wilbur M. Fridell, Ph.D., UC Berkeley, Professor Emeritus

Allan Grapard, Diploma of Advanced Studies and Research, National Institute for Oriental Languages and Civilizations, Paris, Associate Professor (*Japanese religions*)

Phillip E. Hammond, Ph.D., Columbia University, Professor (*sociology of religion*)

Richard Hecht, Ph.D., UC Los Angeles, Associate Professor (*history of religions, Judaic studies*)

Gerald J. Larson, Ph.D., Columbia University, Professor (*Sanskrit, philosophy and history of religions — India*)

Robert S. Michaelsen, Ph.D., Yale University, Professor (*religion in America*)

Raimundo Panikkar, Ph.D., D.Sc., University of Madrid; Th.D., University of Rome, Professor Emeritus

Birger A. Pearson, Ph.D., Harvard University, Professor (*Christian origins, Hellenistic religions*)

William Powell, Ph.D., UC Berkeley, Assistant Professor (*Buddhist studies*)

Ninian R. Smart, B. Phil., Oxford University, Professor (*philosophy of religion, comparative religion*)

Ines Talamantez, Ph.D., UC San Diego, Associate Professor (*Native American religions, anthropology of religion*)

Richard Turner, Ph.D., Princeton University, Assistant Professor (*Afro-American religious history and religion in America, African religions and Islam*)

The Department of Religious Studies at UCSB is unique among California universities, state universities, and colleges. The courses it offers address the critical issues relating to the subject of religion in its many facets: historical, cultural, literary, aesthetic, sociological, experiential, and philosophical. In introductory and advanced courses, its faculty — respected in their fields nationally and internationally — regularly teach about the religions of the world, and about the complex relationships between religion and politics, society, war, and everyday life. It is the only such department in the University of California system to offer B.A., M.A., and Ph.D. degrees.

All students who take a religious studies course learn both to appreciate the centrality of religion to human thought, action, and creativity and to judge its character and historical impact in cultural context. Moreover, they discover how the critical study of religion leads to increased understanding of the relationships among the various fields of knowledge that constitute the humanities and social sciences. A departmental major gains sound general knowledge about religion east and west, ancient and modern, tribal and urban. Careful selection of upper-division electives allows the undergraduate major to pursue a concentration in the field of western religions, Asian religions, or religion and culture. Students also become familiar with the ideas and methods employed in the critical study of religious phenomena. Enterprising students can qualify for a double major in religious studies and some other major field such as English, history, anthropology, political science, philosophy, art, or economics.

The bachelor of arts degree in religious studies is a solid liberal arts degree, providing graduates an excellent basis from which to pursue careers requiring imagination, problemsolving and communication skills, and awareness of human diversity. International studies and graduate work in the humanities and certain areas of the social sciences are other strong possibilities. After completing specific prerequisites, students with a bachelor's degree in religious studies are eligible

to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Religious studies majors are encouraged to meet with the department's undergraduate adviser periodically for assistance in planning their curriculum. Also, the department chair and other faculty are available to consult about programs and academic plans. The department provides an information sheet for undergraduate majors, an up-to-date major requirement list, and a description of courses to be offered each quarter.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Religious Studies

Preparation for the major. Required: any three lower-division courses in religious studies except 10A-F.

Upper-division major. Thirty-six units of upper-division courses are required, of which a maximum of 12 from courses in other departments may be selected in consultation with the adviser.

The upper-division major in religious studies must include the following specific requirements:

- A. Western Religious Studies. Eight units from 100, 101, 109, 115A-B, 116A-B, 129, 130, 131A-B-C-D-E-F-G-H, 134A-B, 136, 137A-B, 138A-B-C, 139, 140A-B-C-E-F, 142A-B-C, 145, 148, 149, 151A-B, 152, 153, 154A, 174, 176, 180, 182, 183, 187, 188, 195
- B. Asian Religious Studies. Eight units from 146, 149, 157, 158, 159A-B-C-D-E-F-G-H-I-J-K-L (no more than eight units of 159 will count toward the major), 160, 161A-B, 162A-B, 164A-B, 165, 166A-B-C-D-E-F-G-H, 167A-B-C, 195
- C. Religion and Culture. Eight units from 104, 105, 108, 110A-B-D, 111, 114B-C-D, 119, 120, 122, 125, 131F-G, 132, 135, 137A-B, 140D, 141A-B-C, 143, 145, 146, 150, 151A-B, 152, 153, 154A-B, 155, 166A-B-C-D-E-F-G-H, 167A-B-C, 172, 173, 177, 178, 179, 182, 183, 184, 186, 195
- D. Problems in the Study of Religion. Religious Studies 104
- E. Eight units of upper-division religious studies electives.

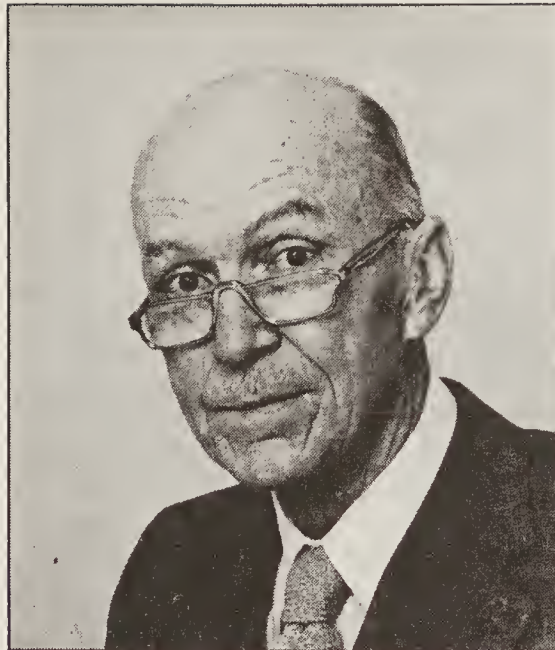
Note: The same course units may not be used to fulfill the requirements in more than one of the areas listed above.

Foreign Languages

Many of the greatest ideas and writings concerning the study of religions, or of a religious character, were formulated in languages other than English. Majors are strongly urged to acquire proficiency in one or more European (e.g., French, German, Spanish, Greek, Latin) or non-European (e.g., Chinese, Japanese, Arabic, Hebrew, Sanskrit) languages. Election to the Phi Beta Kappa honor society requires proficiency in one foreign language, usually demonstrated by completion of the fifth quarter or its equivalent. Students should consult with their departmental adviser to select the most appropriate language. Also, they should seriously consider participating in the university's Education Abroad Program, particularly in Asia, the Middle East, Africa, and Latin America.

Undergraduate Honors

The department offers honors sections in lower-division survey courses such as Religious Studies 1, 3, 5, 7, 12, and 15. Upper-division College Honors Program students may design their own contract courses and independent studies courses with religious studies faculty. Candidates



Literacy about religion has been the major concern of my academic career. Public schools and colleges have been slow to systematically encourage study of this significant dimension of human experience and culture. On emerging from graduate school, I had the rare opportunity to teach about religion in one of the few state universities that then provided for such study. I have since been able to help introduce and shape curricular programs in religion at several state universities, including UCSB. Persistent student interest in the subject has been both stimulating and gratifying.

My teaching and research have focused primarily on religion in America. I have published on a variety of topics, including the Puritans and Mormonism, relationships between religion and public education, and constitutional issues having to do with American Indian religious freedom.

I am immensely pleased to be associated with the University of California and with colleagues and students in this outstanding institution. This is an extraordinary environment in which to live and work.

Robert S. Michaelsen

Robert S. Michaelsen
Acting Vice Chancellor
Professor
Department of Religious Studies

Before coming to UCSB, Dr. Michaelsen taught at the University of Iowa and Yale Divinity School. He has held fellowships at Yale and Harvard and traveled to India as a Fulbright Fellow. A past president and associate director of the American Academy of Religion and secretary of the American Society of Church History, he chaired the UCSB Academic Senate for three years before joining the administration as a vice chancellor.

for the religious studies honors program should formally petition the department chair in the spring or early fall; each petition must be supported by a faculty letter of reference. Candidates must be in residence at UCSB for at least one year (three quarters) as religious studies majors, have a cumulative grade-point average of 3.5, and a grade-point average of 3.75 in religious studies. Once admitted, they work closely with department faculty to prepare an honors thesis. The honors seminar, Religious Studies 195, is designed to facilitate research and writing of the thesis. Honors program graduates are identified separately each year at the head of the graduation list for religious studies, and receive the award of Distinction in the Major upon graduation.

Awards

The Edward C. Truman award is presented annually to a freshman, sophomore, or junior major deemed outstanding by the department and the UCSB Affiliates.

GRADUATE PROGRAM

Master of Arts — Religious Studies

Admission

The department regards its M.A. program as a general, rather than a specialized program. It is designed for students interested in primary and secondary school teaching as well as for those interested in preparing for Ph.D. programs in religious studies. Most applicants are admitted directly into the Ph.D. program, but a student without the M.A. who is interested in the doctorate is advised to apply for the M.A. and Ph.D. in religious studies with the understanding that advancement into the doctoral program is dependent upon successful completion of the M.A. and an evaluation by the department.

In addition to fulfilling the general requirements for admission to graduate status (See the *Graduate Division Announcement*), the department requires an acceptable level of performance on the Aptitude Test of the Graduate Record Examination. Students who do not have an undergraduate concentration in religious studies will be required to make up deficiencies by taking relevant undergraduate courses at UCSB.

Applications will be accepted for admission in the fall quarter of each year. The deadline for receipt of applications is February 1.

Degree Requirements

Before students may enroll for the fourth quarter in the M.A. program, they must demonstrate reading competence in a modern foreign language. Normally, this competence will be in German or French, though the department chair and the graduate adviser are empowered to allow substitution if adequate scholarly justification is presented. Competence in the sources and history of western thought is required. Students will take Religious Studies 200A, 200B, and 200C, and at least three seminars from three different faculty members in the department. Each student will write a thesis under the direction of three faculty members. Requirements for the M.A. degree in religious studies are completion of 36 units, including no fewer than 24 graduate units, plus the submission of an acceptable thesis and the successful completion of a comprehensive exam.

Doctor of Philosophy — Religious Studies

The Ph.D. program in the Department of Religious Studies is designated as Cross-Cultural and Interdisciplinary Studies in Religion. The cross-cultural

area of the program is concerned with the comparative study of religious traditions of eastern and western cultures, and includes Native American religious traditions. Advanced work in this area emphasizes the study of religious texts and other source materials, requiring philological competence; the study of methodology and hermeneutics; and comparative phenomenological, philosophical, and theological investigation.

The interdisciplinary studies area of the program concentrates on the relation of religion to the humanistic traditions of thought and expression in both classical and contemporary forms. Students are expected to do advanced work in one of the traditional disciplines—literature, history and theory of art, philosophy, sociology—in addition to preparing themselves in the history of western thought and in a general approach to the theory and history of religion.

Admission

Applicants holding the M.A. degree in religious studies (or its equivalent) may apply directly to the Ph.D. program. Others should refer to the admissions procedures for the M.A. in religious studies.

Degree Requirements

Reading competence in a modern foreign language must be demonstrated before the student may enroll for a fourth quarter in the department or take the field examinations. Reading competence in the second required language must be demonstrated before taking the oral qualifying examination. Normally this competence will be in German and French, though the department chair and the graduate adviser are empowered to allow substitution if adequate scholarly justification is presented. Competence in certain classical or ancient languages may also be required, depending on the student's program of study.

All graduate students must take Religious Studies 200A, 200B, and 200 C, which include the preparation of a methodological paper. Selection of other courses is to be worked out in consultation with the student's adviser. Competence in the sources and history of western religious thought is required of all graduate students. Students admitted directly into the doctoral program without the M.A. or its equivalent are required to take 36 units of advanced work.

All graduate students will be required to take a written comprehensive examination at the conclusion of 200C. Any student who passed this examination as part of the M.A. program in the department will thereby have satisfied this requirement. By the end of their sixth quarter, doctoral students will take three-hour field examinations in their areas of major emphasis. These examinations will be prepared by the student's doctoral committee, for whom the student will then prepare a dissertation prospectus. The prospectus will constitute the major occasion for the oral qualifying examination, upon successful completion of which the student will be advanced to candidacy. Candidates must write a dissertation, under the supervision of the doctoral committee, demonstrating an ability to do significant research and scholarly analysis and to present findings and conclusions with precision and clarity. The dissertation must normally be completed within five years after passing the qualifying examination, and it must be formally defended.

All doctoral students are required to serve as teaching assistants some time during their residence in the Ph.D. program. Residence requirements for the Ph.D. degree are discussed in the *Graduate Division Announcement*.

RELIGIOUS STUDIES COURSES

LOWER DIVISION

1. Introduction to the Study of Religion
(4) Staff

A consideration of major themes, issues, types of figures and phenomena, and traditions—all selected from the history of religion so as to illustrate the great variety of religious phenomena and to suggest some of the ways such things may be responsibly studied.

3. Introduction to Asian Religion

(4) Staff
A multimedia exploration of basic themes in Asian religion.

5. Introduction to Western Religion

(4) Staff
An introductory survey of basic themes in the religious traditions of Judaism, Christianity, and Islam.

6. Religion Today

(4) Staff
Course may be repeated up to eight units.
A survey of the growth and development of twentieth century religious thought and its historical background.

7. Introduction to American Religion

(4) Michaelsen
Religion and religions in America. Survey of the variety of religions or religious traditions in America, including Native American, Asian, Afro-American, Judaism, Roman Catholicism, and the varieties of Protestantism. Focus also on such common features as "civil religion."

8. Introduction to Religion and Ethics

(4) Staff
An introductory survey of the basic issues and themes in the relationship between religion and ethics.

10A. Arabic I

(4) Campo
The beginning course in Arabic. The student acquires the basic structure of the language, a limited general vocabulary, correct pronunciation, and ability to read and understand simple cultural texts. Weekly language laboratory assignments support and enhance classroom learning.

10B. Arabic II

(4) Campo
Prerequisite: Arabic I or consent of instructor.
Continuation of Arabic I.

10C. Arabic III

(4) Campo
Prerequisites: Arabic I, II, or consent of instructor.
Continuation of Arabic II.

10D. Arabic IV

(4) Campo
Prerequisites: Arabic I, II, III or consent of instructor.
The intermediate course in Arabic. Review of grammar, syntax, and vocabulary. Development of skills in expression and reading.

10E. Arabic V

(4) Campo
Prerequisite: Arabic IV or consent of instructor.
Continuation of Arabic IV.

10F. Arabic VI

(4) Campo
Prerequisite: Arabic V or consent of instructor.
Continuation of Arabic V. Selected readings in Arabic literature and the modern print media.

12. Religious Approaches to Death

(4) Comstock
An examination of traditional and modern works dealing with the art of dying and death. Current discussions amongst sociologists and psychologists as well as significant literary works are related to materials on death in religious traditions like Christianity and Buddhism.

14. Introduction to Native American Religious Studies

(4) Talamantez
This course is designed as an introduction to the contribution that native American religions make to the general study of religion. Metaphysical and philosophical aspects of North American native culture. Major concepts of belief systems, religion, and medicine. Theories of balance, harmony, knowledge, power, ritual, and ceremony.

15. Religion and Psychology

(4) Staff
A survey of theories and approaches to the study of religion from the perspective of psychology, with an emphasis on psychoanalytical, analytical, and humanistic psychology as well as on other theorists and trends emerging out of or relating to these traditions in psychology.

20. Nature: East Asian Views

(4) Grapard
Elements of an environmental worldview, with attention to Chuang Tzu, Chinese painting, Shinto, Japanese folklore, Buddhist Mahayana philosophy, and Zen.

21. Zen

(4) Grapard
Prerequisite: none but familiarity with basics of Buddhism recommended.
A general introduction to Zen as it has developed in Asia and more recently in the West, with careful examination of Zen practice and enlightenment experiences. Attention to such special dimensions as Zen and science, Zen and the arts, and Zen in America.

25. Dimensions of Christianity

(4) Smart
In some ways Christianity is the least understood of the world's religions, perhaps because those who study it are either too close to it, too alienated, or too specialized. This course places Christianity in its plural and multidimensional context and uses the methods of the history of religions to examine it.

40. Religion and Society

(4) Hammond
An introduction to the analysis of how social forces shape religion and religious forces shape the behavior of persons and institutions. The contemporary scene is emphasized, although attention is also given to cross-cultural and historical matters.

50. Religious Classics of the Western World

(4) Capps
Description and interpretation of prominent literary, architectural, and pictorial expressions of religion in western culture.

UPPER DIVISION

Please note that the letter suffixes attached to the numbers of many of the upper-division courses

do not necessarily indicate a prerequisite sequence.

All courses listed below have as a prerequisite any lower-division course in religious studies or consent of the instructor except Religious Studies 107, 125, 129, 138C, 141C, and 154B.

100. From Augustine to Luther

(4) Capps

Study of the major themes, figures, patterns of thought, and artistic styles of medieval and early reformation Christianity.

101. A Survey of Western Religious Thought

(4) Comstock

Recommended by the department for all M.A. and Ph.D. candidates in religious studies.

A survey of leading problems in Greek philosophy, medieval theology, and modern philosophy of religion that have special bearing on the questions of the nature and concerns of religion.

104. Problems in the Study of Religion

(4) Staff

Prerequisite: religious studies majors only. May be repeated once for credit.

Problems involved in the meaning of "religion," the goals of religious studies, religious pluralism, and the role of religion in the modern world.

105. Human Liberation and Technology

(4) Staff

While traditional religions claim to liberate people from bondage, modern technology purports also to free the human being from the shackles of nature. A study of the mutual relationship and critical analysis of both claims.

108. Comparative Ethics

(4) Smart

Variations in behavior occur in differing cultures partly for religious reasons. The course explores the reasons, and deals with the spiritual dimension of moral taboos. It also deals somewhat with humanistic and other ideological alternatives to religion.

107. Contemporary Christian Thought

(4) Staff

Prerequisite: any lower-division religious studies course.

From Barth and Tillich to liberation theology: description and analysis of the principal questions and issues within contemporary Christian thought.

109. Varieties of Christianity

(4) Smart

Prerequisite: Religious Studies 25 or consent of instructor.

This course examines selected varieties of Christianity, such as Roman Catholicism, Mennonites, Orthodoxy, Anabaptism, Anglicanism, and modern sects. It thus brings out the pluralism of the tradition. Is Christianity indeed really a single religion?

110A. Religion and Literature

(4) Comstock

An examination of the interaction between religion and literature through the study of literary works. Figures like John Milton, William Blake, and T. S. Eliot are among those to be considered.

110B. Literature and Visionary Experience

(4) Comstock

A study of religious experience—visions, mystical insights, etc., through works of literature in which such experiences play a major role.

110D. Ritual Art and Verbal Art of the Pacific Northwest

(4) Talamantez

Religious ethos of selected peoples of the Pacific Northwest as it is expressed in masking, costume, body paint, art, and architecture. Study of mythology, ritual and symbolism, contemporary developments.

111. Problems of Faith and Doubt in the Modern World

(4) Comstock

Prerequisite: any lower-division religious studies course.

The problems of religious faith and doubt as they pertain to both society and the individual. The focus is mainly on the nineteenth and twentieth centuries.

114B. Religious Traditions of the Southwest

(4) Talamantez

Survey of the cultures of the southwestern United States to discern the place of religion in the life of Athabaskan, Pueblo, Uto-Aztecan, and native peoples of California. Consideration of the relationships between social structure, environment, and history as they affect religious behavior. Brief overview of the Native American church, folk Catholicism, curanderismo, and espiritismo.

114C. Myths, Symbols, and Transitions in Native American Religions

(4) Talamantez

An exploration of the nature, structure, and meaning of ritual act and ritual language in the religious life of native cultures of the Southwest. Intensive study of selected ritual oratory with particular attention to myth and symbol. The relevance of linguistic models for interpreting ritual. Approaches to symbolism including the interrelations between different media (oral, aural, tactile, plastic), and to features of formalism, redundancy, and condensation in ritual. Examination of a select number of monographs.

114D. Religion and Healing in Native America

(4) Talamantez

An interdisciplinary and comparative study of representative Native American cultures and their religio-medico systems. Emphasis on understanding the experimentation, evaluation, and sacralization of the biosphere in culture to meet human physical and spiritual needs. Examination of the special place of language in well-being. Attention will be given to changes which are a result of contact with European culture.

115A. Literature and Religion of the Hebrew Bible

(4) Hecht

Introduction to the varieties of literature, traditions, and institutions of ancient Israel through the prophetic period.

115B. The Prophets

(4) Hecht

The origins, development, and enduring significance of the prophetic movement in ancient Israel.

116A. Christian Beginnings

(4) Pearson

Study of the varieties of early Christian traditions and literature of the first century, with special (but not exclusive) attention to the New Testament.

116B. Second-Century Christianity

(4) Pearson

Prerequisite: Religious Studies 116A or equivalent.

Study of the various religious trends in developing Christianity as represented in the writings of the

early Fathers, the later books of the New Testament, the New Testament Apocrypha, and "heretical" movements.

119. God and Cosmos in the Modern World

(4) Comstock

Prerequisite: any lower-division religious studies course.

Changes in the way in which God may be understood to be related to the cosmos. Theism, pantheism, and other options are studied.

120. Religion, Ideology, and an Emerging World Culture

(4) Smart

Traditional religions, especially Christianity and Buddhism, in interplay with secular ideologies (such as Marxism, liberal humanism, nationalism) with a view to investigating the patterns of unity developing in the various cultures of the world.

122. Religious Systems of Africa

(4) Turner

Prerequisite: a lower-division religious studies course or consent of instructor.

A survey of the various religious traditions of African Continent.

125. Special Topics

(4) Staff

Prerequisites: upper-division standing or one prior course in religious studies. No more than eight units of major credit will be given, but course may be repeated up to a 12 unit maximum.

Lectures in special areas of interest in religious studies. Specific course titles to be announced by the department each quarter.

129. Religions of the Ancient Near East

(4) Campo

Prerequisite: any lower-division religious studies course.

An examination of the ancient religions of Mesopotamia as seen through their literature and archaeological remains. The central beliefs, rituals, and symbols of the Sumerians, Babylonians, Assyrians, and others, will be interpreted comparatively, providing fuller knowledge about the cultural environment from which Judaism, Christianity, and Islam later arose.

130. Judaism

(4) Hecht

Elements of traditional Judaism in biblical and rabbinic times.

131A. Palestinian Judaism from Ezra to Akiba

(4) Hecht

Prerequisite: Religious Studies 115A or equivalent.

Study of the various religious trends in Palestine from the time of Ezra to the second revolt, with special attention to the rise and development of the apocalyptic.

131B. Judaism in the Graeco-Roman World

(4) Hecht

Prerequisite: Religious Studies 115A or equivalent.

Study of the cultural and religious interactions of Judaism with Hellenism among the Greek-speaking Jews of the Diaspora. Special attention will be given to the writings of Philo of Alexandria.

131C. Judaism in the Medieval World

(4) Hecht

Course covers period from 650 to 1500 CE and topics: Karaite movements; biblical and talmudic commentaries; growth of mystical movements; disputations between Christians and Jews.

131D. Judaism in Modern Times

(4) Hecht

Prerequisite: background in study of Judaism or consent of instructor.

Challenge of the Enlightenment and emancipation movements to traditional Jewish life in Western and Eastern Europe. Religious and secular responses to these challenges (orthodox, conservative, reform, Zionism, socialism) in Europe and the United States.

131E. Contemporary Trends in Judaism

(4) Hecht

An examination of the variety of trends in Judaism from the First World War to the present. Major areas of study include the following: the philosophies of Franz Rosenzweig, Martin Buber, and Abraham Heschel; the growth of the conservative and reform movements in America; the Holocaust; the postwar disorientation and responses to the Holocaust.

131F. The History of Anti-Semitism

(4) Hecht

A systematic examination of the history of anti-Semitism, beginning with the emergence of anti-Judaism in the world of late antiquity, its transformation into theological anti-Semitism in the Middle Ages, and the emergence of racial anti-Semitism in the modern world. The central focus will be anti-Semitism as a religio-historical category.

131G. Perspectives in the History of Zionism

(4) Hecht

A historical examination of the diverse theoretical systems which, before 1948, reached the conclusion that Jews should create a Jewish state. Emphasis will be given to the social, political, and religious forces which animated these systems as well as the intellectual contributions of major Zionist thinkers, especially Pinsker, Herzl, Ahad Ha-Am, Gordon, Jabotinsky, Katzenelson, Berdichevski, and Weizmann.

131H. Politics and Religion in the City: the Case of Jerusalem

(4) Hecht

Prerequisite: upper-division standing, or a prior course in sociology or religious studies. This course is the same as Sociology 131H.

This course examines relationships between religion and politics in Jerusalem. As a sacred center for Judaism, Christianity, and Islam, and national center for Israelis and Palestinians, Jerusalem provides the unique opportunity to examine co-existing groups holding opposite world views.

132. The Life and Literature of the Synagogue

(4) Hecht

A study of the ritual and intellectual life of the synagogue covering daily and festival liturgies, the lectionary cycle, rabbinic sermons, prayer, and synagogal poetry.

134A. Hellenistic Religions: The Hellenistic Period

(4) Pearson

Historical and descriptive analysis of selected religious phenomena of the Hellenistic world: ruler cults, Greek cults and mysteries, religious developments in the Hellenized Near Eastern lands, and the religious dimensions of Hellenistic philosophy. Emphasis is placed on the study of primary sources.

134B. Hellenistic Religions: The Roman Empire

(4) Pearson

Prerequisite: Religious Studies 134A.

Historical and descriptive analysis of selected religious phenomena of the empire, with special

attention to the Oriental mystery religions, astrology, magic, alchemy, Gnosticism, and the religious dimensions of philosophy in the empire (especially Neo-Pythagoreanism and Neo-Platonism). Emphasis is placed on the study of primary sources.

135. Ancient Nordic Religion

(4) Pearson

The gods and heroes, myths and rituals, of the ancient Norsemen, from prehistoric times to the Viking age. While emphasis is placed on the primary literary sources, especially the Icelandic Eddas, some attention is also given to archaeological evidence.

136. Zoroastrianism

(4) Staff

Prerequisite: at least one lower-division course in religious studies or consent of instructor.

The prophet Zarathustra and his revolution of the ancient Iranian religion. Survey of the history of the Zoroastrian religion, including attention to modern Parsees.

137A. Gnosticism: Gnosticism

(4) Pearson

Prerequisite: any lower-division course in religious studies; not open to students who have taken Religious Studies 137.

Study of the Gnostic religion of late antiquity. Definition and parameters of Gnosticism; primary and secondary sources. Special attention will be given to the Coptic texts from Nag Hammadi, Egypt.

137B. Gnosticism: Mandaeism and Manichaeism

(4) Staff

Analysis of two religions in the region of Iran and Iraq, one (Mandaean) the last remnant of Gnosticism, the other dating from the third century. Special attention to relation between these two and Judaism, Christianity, and Zoroastrianism.

138A. Religious Literature in Coptic

(4) Pearson

Prerequisite: at least one year of Greek.

An introduction to Sahidic-Coptic grammar, with special reference to the Coptic Gospel of Thomas.

138B. Religious Literature in Coptic

(4) Pearson

Readings from the Gospel of Thomas and the Sahidic New Testament.

138C. Religious Literature in Coptic

(4) Pearson

Prerequisites: Religious Studies 138A-B.

Readings from selected Subakhmimic Coptic texts.

139. The New Testament in Greek

(4) Pearson

Prerequisite: Greek 50 or consent of instructor.

Reading in the Greek New Testament, with comparative study of related materials from Greek literature of the Hellenistic-Roman period.

140A. Islamic Beginnings

(4) Campo

Historical and conceptual beginnings of Islam in seventh century Arabia and the life of the Prophet Muhammad; text and message of the Quran, basics of Sunni belief and practice; the rise of the early Islamic empire.

140B. Shi'ite Islam

(4) Campo

Introduction to leading alternative forms of Islam — their history, doctrines, and rituals. Emphasis placed on Imami and Isma'ili communities. Also examines relation between religion and the rise of Khomayni's revolutionary government in Iran.

140C. Sufi Islam

(4) Campo

Study of nature and content of Sufism: asceticism, theosophy, ritual, group organization, and historical experience. Sufi contributions to literature, art, and architecture also examined.

140D. Islam and Culture

(4) Campo

Islam is often seen in terms of its formal components, or its controversial political impact in the modern world. This course presents Islam as it is incorporated into the daily lives of its adherents, ranging from Arabia to Europe, from Asia to America. It also includes a survey of Islamic contributions to world art and literature.

140E. Islam in America

(4) Campo, Turner

Examines Islam in its American setting, from its introduction by way of African slaves, to its transformation into the Black Muslim movement, to its rise as one of the leading non-Christian religions in the United States during the 1970s and 80s.

140F. Islam and Modernity

(4) Campo

This course focuses on Muslim responses to change in the modern period. It includes a review of modern Islamic political thought, an examination of Muslim activist groups and revolutionary movements, and a discussion of calls for religious reform.

141A. Sociology of Religion: The Classical Statements

(4) Hammond

Religion as it is treated by major social theorists, including Marx, Weber, Durkheim, Freud, Simmel, Malinowski.

141B. Sociology of Religion: Religious Organizations in Contemporary Society

(4) Hammond

Religion as it appears in formal institutions, including the study of religious beliefs, religious professionals, and the dynamics of religious organizations. Emphasis is on contemporary U.S.

141C. Sociology of Religion: Church and State Relations

(4) Hammond

Prerequisites: upper-division standing; any lower-division course in religious studies.

Religion as it exists in the civic realm, including the political aspects of churches, the religious aspects of politics, and the role of the courts in mediating the relationship of church and state.

142A. Religious Literature in Hebrew

(4) Hecht

Prerequisite: one year of Hebrew or consent of instructor.

Introduction to the narrative literature of the Hebrew Bible with special reference to Genesis 1-11. Special attention will be given to the principles of form criticism and the interpretative problems that surround this text.

142B. Religious Literature in Hebrew

(4) Hecht

Prerequisite: one year of Hebrew or consent of instructor.

Introduction to poetry of the Hebrew Bible with special reference to cultic songs. Texts will be selected from Psalms, Song of Songs, and Koheleth in order to examine the varieties of poetic style.

142C. Religious Literature in Hebrew

(4) Hecht

Introduction to Palestinian midrashic literature with special emphasis upon the development of reading skills. Texts to be selected from *Bereshit*

Rabbah, Wayyikra Rabbah, and Pesikta de-Rav Kahana.

143. Religion, Revolution, and Peace

(4) Staff

Religions have been often the source of radical changes in human life, i.e., of revolutions. But once a certain status quo has been attained, most religions stand for peace. There is a dialectical tension between peace and revolution at the core of many religions. Historical and philosophical analyses of the problem will be presented.

145. Patterns in Comparative Religion

(4) Staff

Study of major religious issues as addressed by more than one religious tradition. The problem of comparative religion as an academic discipline.

146. Problems in Comparative Mysticism

(4) Staff

Historical and descriptive analysis of selected mystical traditions in South and East Asia, the Middle East, and Europe; and the study of selected key figures, e.g., Chuang Tzu, Shankara, Plotinus, St. John of the Cross, etc.

148. Religion and Atheism

(4) Staff

An analysis of Buddhist, Christian, and modern atheism in the light of comparative religion. The place of God in religion and the nature of nontheistic religiousness.

149. Modern Japanese Nationalism

(4) Fridell

Examination of the sacred character of Japanese nationalism over the past century, and how national leaders mobilized traditional values on behalf of nationalism. National patterns in contemporary Japan, with attention to families, companies, and the "new religions."

150. Hindu and Christian Ethics: Dharma vis-a-vis Righteousness

(4) Staff

A comparative study of the basic value systems of Hinduism and Christianity emphasizing the cross-cultural features of the east and the west for the development of an integral view of human life.

151A. Religion in American History

(4) Michaelsen

Principal figures, groups, trends, and issues in religion in America to 1865.

151B. Religion in American History

(4) Michaelsen

Principal figures, groups, trends, and issues in religion in America since 1865.

152. Religion in America Today

(4) Michaelsen

Recent trends in American religion and in inter-relationships between religion and American society.

153. Religion and Politics in Contemporary America

(4) Capps

Analyses of the interplay of religion and politics in contemporary American life.

154A. The Encounter of Religions in America

(4) Michaelson

Relations between Protestant, Catholic, Jewish, and other religious traditions in America, and between Native American, Afro-American, Asian-American, and European-American religious traditions: confrontation, conflict, alienation, adaptation, and amalgamation; analysis of what it means to be religious in America.

154B. Cults and Anticultism in America

(4) Staff

Prerequisite: Religious Studies 151B or 152.

A critical review of the religious, historical, cultural, and legal issues raised by the presence of numerous nonconventional religions in contemporary North America. Selected religious groups, popularly labeled "cults," will be examined in depth, as will the counter-cult movement.

155. Religion and the Impact of Vietnam

(4) Capps

Impact of the Vietnam War upon American values, religion, and senses of national purpose.

156A. Anthropology of Religion

(4) Staff

Religion as a cultural phenomenon; the nature of religious experience among preliterate peoples; influence of social structure on the development of myth and ritual; comparison between various scientific methods in the study of religion.

157. Religious Arts of Asia

(4) Staff

Prerequisite: any lower-division course in the Department of Religious Studies.

This course introduces students to the study of ritual through an understanding of iconography specifically and aesthetics generally, using the religious traditions of Hinduism, Buddhism, Taoism, and Shinto. This course is, therefore, more akin to a history of ancient cultures than to art history.

158. Religion and Hindu Iconography

(4) Staff

A study of the major themes of South Asian religion, mythology, and ritual through the medium of iconography. Analysis and interpretation of the major gods and goddesses of South Asia and the manner in which the historian of religions may utilize art historical materials.

159A. Religious Literature in Sanskrit

(4) Larson

An introduction to the phonology, morphology, and syntax of classical Sanskrit.

159B. Religious Literature in Sanskrit

(4) Larson

Prerequisite: Religious Studies 159A.

Reading and analysis of classical Sanskrit religious texts: *Mahabharata* and *Hitopadesa*.

159C. Religious Literature in Sanskrit

(4) Larson

Prerequisites: Religious Studies 159A-B or equivalent.

Reading and analysis of classical Sanskrit religious texts: *Mahabharata* and *Hitopadesa*.

159D-E-F. Religious Literature in Sanskrit

(4-4-4) Larson

Prerequisites: Religious Studies 159A-B-C or equivalent. Courses need not be taken in sequence.

Reading and analysis of classical Sanskrit religious texts:

D: Bhagavad Gita

E: Samkhyakarika

F: Yogasutra

159G-H-I. Religious Literature in Sanskrit

(4-4-4) Larson

Prerequisites: Religious Studies 159A-B-C or equivalent. Courses need not be taken in sequence.

Reading and analysis of classical Sanskrit religious texts:

G: Nagarjuna's Karika-s

H: Purana-s

I: Gaudapada's Karika-s

159J-K-L. Religious Literature in Sanskrit

(4-4-4) Larson

Prerequisites: Religious Studies 159A-B-C or equivalent. Courses need not be taken in sequence.

Reading and analysis of classical Sanskrit religious texts:

J: Chandogya Upanishad

K: Katha, Svetasvatara, and Mandukya Upanishads

L: Bhasyas of Shankara

160. Religious Systems of India

(4) Larson

Analysis of Vedic-Upanishadic-Epic traditions: Jainism and Indian Buddhism; six orthodox systems; Vaisnavism, Saivism, and the Hindu Tantra.

161A. Yoga Traditions of India

(4) Larson

Religio-historical analysis of classical Samkhya and Yoga, Jain and Buddhist Yoga, and Tantric Yoga. Study of the role and function of meditation in Indian religion.

161B. Buddhist Meditation Traditions

(4) Powell

A consideration of major forms of Buddhist meditation, from both the South Asian and the East Asian traditions, with special attention given to determining the nature of meditation as a variety of religious experience.

162A. Indian Philosophy and Religion

(4) Smart

The course examines the degree to which certain representative metaphysical systems reflect religious interests and experiences-systems such as those of Nagarjuna, Shankara, Ramanuja, and Madhva.

162B. Seminar on Shankara and Nagarjuna

(4) Larson

Prerequisite: Religious Studies 160 or 161 or consent of instructor.

Historical, thematic, and comparative analyses of Advaita Vedanta and Madhyamika Buddhism.

164A. The Buddhist Tradition

(4) Larson

Origin and development of Buddhist tradition in India and South Asia

164B. The Buddhist Tradition

(4) Powell

Prerequisite: background in Indian Buddhism or consent of instructor.

A consideration of the Buddhist tradition and its evolution in China, with emphasis on the changes which Buddhism underwent in its encounter with Chinese traditions and historical circumstances.

165. The Upanishadic Tradition of India

(4) Staff

Analysis and interpretation of the philosophical implications of selected Upanishads — primal myths, the doctrine of the Self, the mahavakyani, etc.

166A. Religion in Chinese Culture

(4) Powell

A survey of major periods and themes in the history of the Confucian, Taoist, and Chinese Buddhist traditions, with particular emphasis on the differences and tensions among them and on the contributions of each to the formation of the Chinese civilization.

166B. Taoist Traditions of China

(4) Powell

A study of the classical literary sources of Taoism, followed by a consideration of the varieties of religious practice which developed from those sources.

166C. Confucian Traditions: The Classical Period

(4) Powell

A treatment of the origins of Confucianism and of its development through the Han dynasty (to A.D. 200), with special attention to the variety of humane and spiritual disciplines which came to be called "Confucian." Emphasis will be placed on the interpretation of primary texts like the *Analects*, the *Mencius*, the *Hsun Tzu*, etc.

166D. Confucian Traditions: "Neo-Confucianism"

(4) Powell

Prerequisite: Religious Studies 166C or consent of instructor.

A study of the later history of Confucianism, beginning with its post-Buddhist revival in the ninth and tenth centuries A.D., and continuing into modern times. Special attention will be given to the ways in which the varieties of "Neo-Confucianism" incorporate elements not only of classical Confucianism, but also of Taoism and Buddhism.

166E. The Flowering of Chinese Buddhism

(4) Powell

Prerequisite: Religious Studies 164B or consent of instructor.

A study of the distinctively Chinese forms of Buddhism which emerged in the sixth and seventh centuries A.D. Emphasis will be on the Hua-Yen, T'ien-t'ai, and Ch'an traditions, and on the features of those traditions which distinguish them most clearly from Indian Buddhism.

166F. Religious Literature in Chinese: Buddhist Texts

(4) Powell

Prerequisite: one year of formal study of classical Chinese.

Selected readings in important Buddhist texts which were either originally written in Chinese or translated into that language. Only texts not available in Western language translation will be chosen. Attention will be given not only to the content of the texts read, but also to the grammatical, syntactical, and terminological peculiarities of Buddhist Chinese.

166G. Religious Literature in Chinese: Confucian Texts

(4) Powell

Prerequisite: one year of formal study of classical Chinese.

Readings in selected texts from the classical Confucian tradition (Chou dynasty), Han dynasty Confucianism, and the Neo-Confucian traditions of the Sung and Ming dynasties.

166H. Religious Literature in Chinese: Taoist Texts

(4) Powell

Prerequisite: one year of formal study of classical Chinese.

Readings in the *Lao Tzu* (Tao-te-ching) and the *Chuang Tzu* and their latter commentaries.

167A. Religion in Japanese Culture

(4) Grapard

Prerequisite: background in Buddhism or consent of instructor.

Prehistory to 1600. The development of Shinto, as well as Japanese forms of Confucianism, Taoism, and Buddhism. Emphasis on medieval Buddhist sects; Pure Land, Zen, Nichiren.

167B. Religion in Japanese Culture

(4) Grapard

Prerequisite: Religious Studies 167A or equivalent.

1600 to present day. Emphasis on religion and sacred values of the last century, especially pre-war "familyism" and State Shinto, the "new religions," and the overall postwar scene.

167C. Japanese New Religions

(4) Grapard

Emergence of new religions as Japan moves into an uncertain modern age; focus on Nichiren Shoshu, Tenrikyo, and Perfect Liberty Kyodan.

171. Religion, Ethics, and Technology

(4) Comstock

Prerequisite: any lower-division course in religious studies.

New ethical norms raised by modern technology. Special attention to global problems involving social justice, poverty, world hunger, militarism and the threat of atomic war.

172. Religion and Science

(4) Comstock

The impact of western science on religion; the compatibility and complementarity of their discourses. The implications for religion of contemporary scientific theories concerning man and the universe in which he lives.

173. Religious Myth and Language

(4) Staff

Prerequisite: any lower-division course in religious studies.

A survey of contemporary studies about the nature and function of religious symbol and language.

174. Religious Thought and Existentialism

(4) Comstock

Prerequisite: any lower-division course in religious studies.

An examination of the nineteenth- and twentieth-century literary and philosophical movement of existentialism and its implications for philosophy of religion and theology. Typical figures like Kierkegaard, Sartre, Camus, and Buber are examined.

176. Religious Contours of California

(4) Staff

Prerequisite: any lower-division course in religious studies.

California contains virtually all the religious variety known to humankind. It serves as a window, therefore, to the world's religions. This course uses the history of California to introduce these religions.

177. Religion and Law

(4) Hecht, Powell

Prerequisite: any lower-division course in religious studies.

A comparative study of the interrelationship of law and religion within society. Examples selected from the legal traditions of small-scale societies, the great civilizations of the past, and modern societies.

178. Religion and Analytical Psychology

(4) Staff

Interpretations of religion, myth, and symbol in analytic psychology. A study of the work of C. G. Jung, James Hillman, Joseph Campbell, and others.

179. Religion and Humanistic Psychology

(4) Staff

Religion from the perspective of humanistic psychology. Emphasis on William James, Gordon Allport, Abraham Maslow, and on trends emerging out of this tradition in psychology.

180. Problems in the Philosophy of Religion

(4) Staff

A study of the religious dimension of philosophy and the philosophical aspect of religion. Relationship between religion and philosophy cross-culturally examined.

182. Ethics of the Life Cycle

(4) Michaelsen

A study of contrasting models of the life cycle; rites of passage; moral problems associated with birth, growth, sex, work, leisure, aging, and death.

183. Psychoanalytic Interpretations of Religion

(4) Staff

Interpretations and criticisms of religion from the Freudian perspective. Emphasis on the work of Freud, Erik Ericson, and others.

184. Philosophy of Religion: Thinking About Ultimate Questions

(4) Smart

The course explores some key issues in the philosophy of religion in the light of contemporary debate concerning the existence of God, the meaning (or meaninglessness) of life, the criteria of truth as between worldviews, and the validity, or otherwise of religious experience.

186. The Nature of Contemplative Studies

(4) Staff

An examination of contemplative traditions from a cross-cultural perspective. The requirements for a proper method and anthropology are considered based on data available in human culture and various religious traditions.

187. The Monastic Impulse

(4) Capps

The religion of the hermitage and cloister from St. Anthony and St. Benedict. Special attention to current revivals of asceticism, east-west exchanges, and the writings of Thomas Merton.

188. Western Mysticism

(4) Capps

Study of western mystical religion from Bernard of Clairvaux, Eckhart, St. John of the Cross, St. Teresa, to Pascal, Blake, and the modern era.

194. Group Studies for Advanced Students

(1-4) Staff

Enrollment normally limited to 12 or fewer students. Students may repeat this course once for credit, subject to departmental approval, but only four units may apply to the major. Topics vary according to instructor.

195. Senior Honors Program

(1-8) Staff

Prerequisite: open only to upper-division students who have been accepted into the department's honors program.

Projects for advanced work in religious studies in conjunction with individual members of the faculty and developed by students who have qualified for the department's honors program. May be repeated once for credit.

197. Seminar in Religious Studies

(4) Staff

May be repeated once for credit.

An undergraduate seminar designed for but not limited to religious studies majors. Concentration on method and selected topics in the scholarly study of religion.

199. Independent Studies in Religion
(1-5) Staff

Prerequisites: any lower-division course in religious studies. Students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in religious studies. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

GRADUATE COURSES
200A. Proseminar in History and Theory of Religion

(4-8) Staff

Critical analysis and research in methodological problems related to the study of religion.

200B. Proseminar in History and Theory of Religion

(4-8) Staff

Critical analysis and research in the history of western religious thought.

200C. Proseminar in the History and Theory of Religion

(4) Staff

Prerequisites: Religious Studies 200A-B.

Analysis and application of research techniques in religious studies, including (a) identifying researchable problems; (b) designing research projects; (c) data collection, etc. Focus on religious groups in southern California (Christian, Jewish, Hindu, Muslim, etc.) and the American southwest (native American religious communities).

202. Religious Literature in Pali

(4) Larson

Prerequisites: Religious Studies 159A-B-C or consent of instructor.

Phonology, morphology, and syntax of the Pali language with readings of early Buddhist texts from the Pali Canon.

203. Religious Literature in Tibetan

(4) Staff

Prerequisites: Religious Studies 159A-B-C or equivalent.

Phonology, morphology, and syntax of classical Tibetan with readings from Tibetan Buddhist texts.

204. Religious Literature in Vedic Sanskrit

(4) Larson

Prerequisites: Religious Studies 159A-B-C or equivalent.

Phonology, morphology, and syntax of Vedic; and reading of *Rig Veda* I. 1, I.32, X.90, X.129, and other hymns.

205. Religious Literature in Coptic

(4) Pearson

Prerequisites: Religious Studies 138A-B-C or equivalent. Course content variable; may be repeated.

Study of selected Coptic religious texts in the Sahidic, Sub-Achmimic, Achmimic, or Bohairic dialects.

206. Seminar on Indic Religious Studies

(4) Larson

Prerequisites: Religious Studies 159A-B-C or equivalent.

Analysis and interpretation of selected research topics in South Asian religion and thought. Attention to research methodology and the use of primary source materials.

207. Guided Readings in Classical Sanskrit Religious Texts

(4) Larson

Course content variable; may be repeated.

Selected readings in classical Sanskrit, Pali, and Vedic religious texts.

210. Guided Readings in Arabic Religious Texts

(4) Campo

Prerequisites: Arabic I-VI (Religious Studies 10A-F) or consent of instructor.

Selected readings on Islamic subjects in Arabic. Focus on scripture, interpretation, and religious biography.

216A-B-C. Computer Assisted Research

(4-4-4) Staff

Prerequisite: graduate status.

This course is intended to introduce and develop computer methods of research within the terms of textual and information management efforts in religious studies.

218. Computer Assisted Textual Analysis

(4) Staff

Prerequisite: previous computer training course.

Application of computer methods to the research demands of textual analysis in religious studies.

219. Sartre's Critique of Dialectical Reason

(4) Larson

A critical analysis of such notions as "history," "totalization," "praxis," and "collectivities" as set forth in Sartre's *Critique of Dialectical Reason* and the implications of that analysis for doing "history of religions."

220. Bibliography and Research Methods in the Study of Religion

(1-12) Hecht

An advanced study of bibliography and research methods in preparation for doctoral study in the field of religion.

222. Aesthetics of Religion

(4) Comstock

Course content variable; may be repeated.

Analyses of art forms, conceptual models, paradigm formation, visual portrayal, projective techniques; correlations between art and religion.

229. The Archaeology of Religious Knowledge

(4) Staff

An investigation of the relevance to religious studies, particularly to the history of religions, of the work of the philosopher/historian Michael Foucault.

230. Seminar in the History and Theory of Religion

(4) Staff

Scholarly perspectives and disciplinary approaches to critical study and research in the history and theory of religion.

231. Phenomenology of Religion

(4) Smart

The course involves an examination of some approaches to phenomenology in recent literature; and then examines specific concepts and phenomena, such as worship, shamanism, sacrament, and religious identity.

232. Religion and Philosophy: Theories and Method

(2-4) Comstock

Course content variable; may be repeated.

A survey of ways in which religion and philosophy have been related in the history of western civilization. Religious metaphysics, theology, and the

approach of contemporary analytic philosophy to religion are considered

233. Religion and Literature: Theories and Method

(2-4) Comstock

Course content variable; may be repeated.

A survey of the work of literary critics and religious thinkers who have developed connections between the study of literature and religious thought.

235. Seminar in Western Religious Thought

(4) Capps

Historical and critical examination of selected figures and movements.

236. Seminar on Exegetical Perspectives in Judaism and Islam: The Joseph Narrative

(4) Hecht

A study of the Joseph narrative in terms of biblical and Koranic presentation as interpreted by medieval and modern exegetes. Attention will be given to the literary dimensions of the text as perceived by medieval and modern belletrists.

238. Seminar in Modern Religious Thought

(4) Comstock

Detailed examination of the intellectual structures of major nineteenth- and twentieth-century representatives of western religious thought. Emphasis on methodologies and systematic form of basic positions.

239. Seminar on Teilhard de Chardin

(4) Staff

Reading and critical analysis of the works of Teilhard de Chardin.

240. Seminar in the Sociology of Religion

(4) Hammond

Course content variable; may be repeated.

Detailed examination of major figures, schools, and types of research.

244. Problems in Religion and Society

(4) Michaelsen

Prerequisite: graduate standing or consent of instructor. Course content variable; may be repeated.

Influence of religion upon society and society upon religion; institutional roles; transcendent referents; law and justice; value conflicts. Analysis of the thought of such figures as Weber, Troeltsch, Reinhold Niebuhr, H. Richard Niebuhr, J. D. Murray, Ellul, and C. Dawson.

246. Seminar in Comparative Mysticism

(4) Smart

Historical and comparative analysis of selected mystical traditions in the East and the West.

247. Seminar in Native American Religious Traditions

(4) Talamantez

Course content variable; may be repeated.

Historical and critical examination of selected figures, categories, and phenomena pertaining to the diversity of Native American religious traditions.

250. Seminar in the History of Religions

(4) Staff

Course content variable; may be repeated.

Comparative study of selected religious structures or symbols, from eastern and/or western religious traditions.

251. Seminar in Hellenistic Religions

(4) Pearson

Prerequisite: reading knowledge of Greek required. Course content variable; may be repeated.

Historical and critical examination of selected figures, texts, and phenomena pertaining to Graeco-Roman religion.

252. Seminar in Christian Origins

(4) Pearson

Prerequisite: Religious Studies 116 or equivalent. Course content variable; may be repeated.

Historical and critical examination of selected figures, ideas, and movements pertaining to nascent Christianity.

253. Seminar in Hellenistic Judaism

(4) Hecht, Pearson

Prerequisite: knowledge of Greek or Hebrew highly recommended.

Historical and critical examination of selected figures, texts, and phenomena pertaining to Judaism in the Graeco-Roman world, and its interaction with Hellenistic culture and religion.

255. Seminar in Comparative Hindu-Buddhist Thought

(4) Larson

Thematic and comparative analyses of Hindu theological traditions in India with Buddhist philosophical traditions in South and East Asia. Analysis of such problems as Hinduization, Sanskritization, Chinese Buddhist appropriation of Indian ideas, and methodological presuppositions for cross-cultural study.

257. Seminar in Buddhist Studies

(4) Staff

Historical, philosophical, and bibliographic analysis of selected traditions within Buddhism. Also, consideration of the relation of Buddhist traditions to related phenomena within Hinduism.

258. Seminar in Religion in America

(4) Michaelsen

Intensive study of major figures and significant movements in the context of American culture.

259. Topics in East Asian Buddhist Thought

(4) Powell

A historical and critical analysis of selected issues in the development of Buddhist thought in China, Korea, and Japan.

260. Seminar on Religion and Art in Indian Asia

(4) Staff

A study of the relation between the religious and the esthetic in the cultures of Indian Asia, with special reference to the morphology and iconography of the mother goddess.

263A-B. Seminar on Religion and Societal Change

(4-4) Hecht, Friedland

May be repeated. Same course as Sociology 263A-B.

This seminar examines the role of religion in societal change.

A: Will discuss major theories from Durkheim and Weber to Rokkan and Foucault.

B: Will consider specific cases which will vary from year to year.

270. Seminar in Religious Myth and Symbol

(4-4-4) Comstock

A detailed survey of important approaches to religious myth and symbolism. The various methods of literary analysis and anthropological and sociological study, linguistic analysis, and the phenomenology of religion, will be considered.

272A-B-C. Religion and the Humanistic Disciplines

(4-4-4) Comstock

An examination of methods by which religious studies can be related to such fields as literature, art, philosophy, psychology, and sociology.

273. The Problem of Cosmologies

(4) Smart

This seminar in the philosophy of religion will focus on the relation between traditional religious cosmologies and modern scientific views of the cosmos. Two main issues will be treated: the way in which cosmological symbolisms can clash with scientific knowledge, and the way in which religious and scientific truths differ in their sources.

287. Ascetic Religion in the West

(4) Capps

Adjunct seminar on undergraduate course, Religious Studies 187; the religion of the hermitage and cloister from St. Anthony and St. Benedict to New Camalodoli.

290. Seminar in Major Texts and Figures

(4) Staff

Course content variable; may be repeated.

Seminar focuses on an intensive study of a major text or figure within a religious tradition.

520A. Religion, Ideology, and an Emerging World Culture

(4) Smart

Traditional religions, especially Christianity and Buddhism, in interplay with secular ideologies (such as Marxism, liberal humanism, nationalism), with a view to investigating the patterns of unity developing in the various cultures in the world.

590. Instructional Issues in Religious Studies

(4) Staff

Review of issues confronting the teacher of religious studies, including religion in higher education, teaching strategies, objectivity in presentation, and methods of evaluating students.

591. T.A. and Associate Training Program

(1-4) Staff

May be repeated; no unit credit allowed toward advanced degree.

Required orientation and on-the-job training of teaching assistants and associates through consultations with instructors, evaluation of their teaching through videotapes or other means of observation, follow-up consultations, teaching, evaluation.

592. Directed Reading

(1-12) Staff

Course content variable; may be repeated.

Special readings selected under guidance of individual instructor to help students make up particular gaps in their intellectual backgrounds that are pertinent to their graduate program.

593. Colloquium

(4) Staff

Course content variable; may be repeated.

A series of discussions involving panels, debates, special speakers, etc., at which the presence of all enrolled graduate and selected faculty is required.

592AA-ZZ. Special Topics

(1-12) Staff

Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies

(1-12) Staff

Critical review of research in selected fields.

596. Directed Reading and Research

(1-12) Staff

Research and preparation of dissertation.

597. Individual Study for Master's or Ph.D. Examinations for Advancement to Candidacy

(1-12) Staff

No unit credit allowed toward advanced degree.

598AA-ZZ. Master's Project Research and Preparation

(1-12) Staff

No unit credit allowed toward advanced degree.

For research underlying the project, writing the project.

599AA-ZZ. Ph.D. Dissertation Preparation

(1-12) Staff

Terminal preparation of the dissertation.

LANGUAGE OFFERINGS IN RELIGIOUS STUDIES

ARABIC

See Religious Studies 10A-F, 210

CHINESE

See Religious Studies 166F-H

COPTIC

See Religious Studies 138, 205

GREEK

See Religious Studies 139

HEBREW

See Religious Studies 142

PALI

See Religious Studies 202

SANSKRIT

See Religious Studies 159, 204, 207

TIBETAN

See Religious Studies 203

Renaissance Studies

Renaissance Studies Program, Department of English, South Hall 2607; Telephone (805) 961-3441. Program Chair: Richard Helgerson.

Advisory Committee

Richard Helgerson, Ph.D. (English)

J. Sears McGee, Ph.D. (History)

Michael W. O'Connell, Ph.D. (English)

William Prizer, Ph.D. (Music)

Affiliated Faculty

Robert Egan, Ph.D. (Dramatic Art)

Abraham Friesen, Ph.D. (History)

William Frost, Ph.D. (English)

Donald Guss, Ph.D. (English)

Gerhart Hoffmeister, Ph.D. (German)

Peter T. Meller, Ph.D. (Art)

Alfred K. Moir, Ph.D. (Art)

Alejandro Planchart, Ph.D. (Music)

Robert Potter, Ph.D. (Dramatic Art)

William Prizer, Ph.D. (Music)

Mark Rose, Ph.D. (English)

Homer D. Swander, Ph.D. (English)

Ronald W. Tobin, Ph.D. (French)

Burr Wallen, Ph.D. (Art)

The interdisciplinary major in renaissance studies is intended to serve students interested in an undergraduate liberal arts major, as well as those who plan to pursue graduate studies in the field. Course work leading to a B.A. in renaissance studies may be done in English and European literatures, history, art, and music. With the assistance of members of the advisory committee, students will set up individual programs structured by their special interests. Students should consult with their advisers each quarter from the beginning of their junior year to have their programs formally approved and to learn about special renaissance studies courses. Students are also encouraged to consider spending one of their undergraduate years in a European university through the Education Abroad Program.

After completing specific prerequisites, students with a bachelor's degree in renaissance studies are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

Bachelor of Arts — Renaissance Studies

Preparation for the major. Required: History 4A-B and a reading knowledge of Latin or a modern European language to be certified by examination. Recommended: Art History 6C; Classics 37, 38, 40; English 20.

Upper-division major. Forty upper-division units are required, including (1) History 120A-B; (2) Renaissance Studies 100; and (3) 28 additional units from the following list, with the selection forming a coherent unit that must be approved by a member of the advisory committee.

Art History 155B-C-D, 156A-B-C-D-E-G

Classics: a maximum of 12 units chosen in consultation with a faculty adviser

Comparative Literature 105

Dramatic Art 160B, 162

English 102A, 117A-B-C-D-E, 144, 145, 146, 151 (when course is appropriate to Renaissance studies), 151S, 157, 162

French 106A, 140A-B-C, 141X, 149, 150A

German 167

History 106A, 114C, 118, 140A-B-Q, 150A-B, 153, 154A, 155A, 156A

Italian 110C, 111, 116X-Y-Z, 117X, 139X-Y

Music 102, 180

Portuguese 105A-B, 114, 132A-B

Religious Studies 100

Renaissance Studies 199

Spanish 110B, 115A, 123A, 131A-B, 134, 137A-B, 140A-B, 141, 191

RENAISSANCE STUDIES COURSES

UPPER DIVISION

100. Studies in Renaissance Civilization (4)

Course may be repeated for credit with consent of program chair.

An introduction to the interdisciplinary study of Renaissance civilization. Specific topics will vary from year to year and may include such subjects

as Medici Florence, fifteenth-century Burgundy, Renaissance Neo-Platonism, Renaissance humanism, or Renaissance Petrarchism.

199. Independent Studies in the Renaissance (1-5)

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in renaissance studies.

Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Not more than 12 units total of Renaissance Studies 199 may be taken.

Study or research under the guidance of a member of the advisory committee for seniors of high scholastic standing. Students wishing to enroll should prepare a short plan of study for their course work.

Sociology

Department of Sociology, Ellison Hall 2834; Telephone (805) 961-3314. Department Chair: Harvey L. Molotch.

Faculty

Richard P. Appelbaum, Ph.D. University of Chicago, Associate Professor (*urban political economy, community development, public policy, Marxism, critical theory*)
John D. Baldwin, Ph.D., Johns Hopkins University, Professor (*G. H. Mead, social behaviorism, socialization*)
Richard A. Berk, Ph.D., Johns Hopkins University, Professor (*quantitative methods, evaluation research, sociology of law*)
Sarah Fenstermaker Berk, Ph.D., Northwestern University, Associate Professor (*work and gender, deviance, feminist theory*)
Denise D. Bielby, Ph.D., University of Wisconsin, Lecturer (*aging, adult socialization, gender*)
William T. Bielby, Ph.D., University of Wisconsin, Professor (*social stratification, organizations, quantitative methods*)
Robert H. Billigmeier, Ph.D., Stanford University, Professor Emeritus
Donald R. Cressey, Ph.D., Indiana University, Professor Emeritus
Beverly Duncan, Ph.D., University of Chicago, Professor (*population studies*)
Otis Dudley Duncan, Ph.D., University of Chicago, Professor Emeritus
Sethard Fisher, Ph.D., UC Berkeley, Professor (*social and personal change, socialization, social welfare, race relations*)
Richard Flacks, Ph.D., University of Michigan, Professor (*political sociology, social movements, political consciousness*)
Morris F. Friedell, Ph.D., University of Chicago, Associate Professor (*humanistic sociology: personal and political*)
Roger O. Friedland, Ph.D., University of Wisconsin, Associate Professor (*political sociology, urban sociology, religion and societal change*)
David Gold, Ph.D., University of Chicago, Professor (*political sociology, public opinion, mass communication, methodology*)
Harvey L. Molotch, Ph.D., University of Chicago, Professor (*urban growth, media studies, domination*)
Victor Nee, Ph.D., Harvard University, Associate Professor (*political sociology, development/modernization, ethnicity, Chinese society*)

Garry Rolison, Ph.D., UC Santa Cruz, Assistant Professor (*social stratification, race relations, and theories of class*)
Denise Segura, Ph.D., UC Berkeley, Assistant Professor (*gender, labor, ethnic, and race relations; education; Chicano studies*)
Thomas J. Scheff, Ph.D., UC Berkeley, Professor (*social psychology, emotions, mental illness*)
Beth E. Schneider, Ph.D., University of Massachusetts, Assistant Professor (*family, sexuality, gender inequality, feminist studies, social movements*)
Gary I. Schulman, Ph.D., Stanford University, Associate Professor (*social psychology, methods, sex roles, small groups analysis, hypnosis as a research tool*)
Tamotsu Shibutani, Ph.D., University of Chicago, Professor (*social psychology, theory construction, collective behavior*)
John A. Sonquist, Ph.D., University of Chicago, Professor (*research methodology, computer applications, simulation, organizations, social networks, technological change*)
Charles B. Spaulding, Ph.D., University of Southern California, Professor Emeritus
Bruce C. Straits, Ph.D., University of Chicago, Associate Professor (*demography, population psychology, social research techniques*)
Thomas P. Wilson, Ph.D., Columbia University, Professor (*ethnomethodology, quantitative methods, theory, foundations*)
Don H. Zimmerman, Ph.D., UC Los Angeles, Professor (*ethnomethodology, conversation analysis, analysis of natural settings*)

Affiliated Faculty

Noah E. Friedkin, Ph.D. (Education)
Phillip E. Hammond, Ph.D. (Religious Studies)

Sociology is the systematic study of social life. Sociologists seek to understand the process by which societies, communities, institutions, and organizations are created, maintained, undermined, and transformed, and the ways in which social life shapes individual members of society.

The undergraduate sociology curriculum at UCSB is designed to be flexible, enabling students to choose from or combine three different purposes for studying sociology. First, for students who have a strong concern with society, the sociology major can be the core of a liberal arts education. Second, the major can be used as preparation for a career in such fields as law, management, journalism, social work, urban and environmental planning, teaching, corrections, counseling, and other service professions. Third, the sociology major can serve as preparation for graduate study for a career as a professional sociologist. The requirements for the sociology major are designed to provide students with a basic grounding in the nature and methods of the discipline while permitting wide latitude for individual students to pursue or explore their interests.

The Department of Sociology is composed of men and women who are active contributors to the field. The department is recognized for its diversity of perspective and particularly for its support for emerging areas of study and innovative approaches to the discipline. The department has considerable strength in quantitative methods of research and analysis. It has its own computer facility, providing terminals for student use in course-related projects. The department is also affiliated with the Social Process Research Institute, which conducts policy-related research in the social sciences.

Undergraduate majors, incoming students, and prospective majors are invited to consult the department undergraduate academic adviser about all aspects of planning a program in sociology. Detailed descriptions of course offerings are

available in the department office prior to the registration period, along with several guides and information sheets for majors and prospective majors.

After completing specific prerequisites, students with a bachelor's degree in sociology are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Sociology

Preparation for the major. Sociology 1 or 101, 2, 3, and one of the following subject sequences.

- A. Anthropology 2 (*cultural anthropology*) and one additional course in anthropology except physical anthropology
- B. Either Economics 1 and 2, or 109 (*principles of economics*) and one additional course in economics (except 1 or 2)
- C. History 4A-B-C (*Western civilization*)
- D. Political Science 12 or 100 (*American government*) and one additional political science course
- E. Psychology 1 or 101 (*general psychology*) and one upper-division psychology course

Courses taken in preparation for the major (except sociology) may be used to satisfy the appropriate General Education requirements.

Upper-division major. Thirty-six units of upper-division sociology courses, not including 101, are required. Of the 36 units, at least 20 units must be taken from courses numbered 102 through 189, inclusively. Upon approval of a faculty member and the department chair, a maximum of nine units of upper-division work in closely related fields may be taken as part of the 36 required units. Only four units each of Sociology 119A-B-C and 191A-C-D-E can be applied to the upper-division major. Up to eight units of the following courses may be taken on a passed/not passed basis: Sociology 146, 153S, 190A-B, 191A, 191C-D-E, 194, 196H-HT, 198, 199.

Recommended Programs

1. Students considering graduate training for careers as professional sociologists are advised to take basic methods and statistics courses and at least one theory course. Additionally, students should begin by taking a wide range of different courses for diversity of exposure and then specialize in one or two areas that hold special interest. Students who anticipate applying for graduate school should discuss their programs at an early stage with the undergraduate adviser and a faculty member. It is also recommended that such students seek individualized work with faculty members.

2. Students considering a career in public and social affairs should plan their programs with graduate study in mind as such careers typically require study at the master's level in urban planning, social work, public affairs, business, law, or sociology. A program in public and social affairs should involve a background in methods and analysis, a foundation in computer skills, a basic knowledge of societal organization and change, a special focus on urban programs, and an in-depth knowledge of one or more additional areas of particular interest. Field experience through an internship (191A) is strongly recommended.

3. Students interested in acquiring technical skills in data management for careers in government, research, or business firms are advised to learn not only the technical aspects of research, but the

sociological dimension as well: the institutional settings that frame policy-related problems, ways to formulate and conduct research programs, and intelligent interpretation of the results of analysis. Students should consult with an adviser to plan an appropriate program.

OFFERINGS IN SOCIOLOGY GROUPED BY SUBJECT MATTER

The following list groups sociology courses that deal with related subject matter and are often planned to mesh with each other. In planning their programs, students should refer to the discussion of recommended programs in the preceding narrative where three different programs of study are identified. Students should also refer to the course descriptions immediately following this section and should note prerequisites for courses before planning their schedules. Courses are often not in sequence by number, and a higher numbered course can be a prerequisite to a lower.

I. Quantitative Methods of Sociological Research and Data Analysis

These courses are concerned with methods of collecting and analyzing quantitative information, and several provide instruction in the use of computers. Basic knowledge of statistics is a prerequisite for these courses; a minimum preparation would be provided by Sociology 3, but either Sociology 44, P/STAT 33, or Economics 5 are preferred as background.

A. Research methodology courses

103. Methods of Sociology Research
- 104A-B-C. Fundamentals of Data Analysis Sociology
105. Laboratory in Group Research
110. Data Processing and Analysis
- 112A-B. Practicum in Social Research
- 155R. Chicana Research Issues

B. Computer-related courses

106. Computer Simulation of Social Processes
- 109A. Introduction to Computing for Social and Behavioral Sciences
- 109B. Computer Applications in the Social Sciences
- 109C. Special Topics in Computer Applications in the Social Sciences
113. Systems Analysis and Information System Design
115. Minicomputer-based Computer-aided Instruction Systems
- 155R. Chicana Research Issues
192. Projects in Computer Science (individualized instruction)

II. Societal Organization and Change

These courses are concerned with large-scale social processes, and the core issues of sociology — how societies maintain themselves and how they develop and change.

111. Computers and Society
121. Environment and Society
122. Social Stratification
124. Collective Behavior
125. Intercultural Studies in Community Milieux Abroad
- 126U. Sociology of the Urban Underclass
130. Comparative Social Development and Change
131. Political Sociology
- 131H. Politics and Religion in the City: The Case of Jerusalem
- 131R. Sociology of the Modern State
132. Public Opinion
134. Social Movements
- 134F. Film and Culture of the 1960's
138. The Sociology of Conflict
157. Radicalism in American Life
161. Sociology of People's Republic of China

166. Economy and Society

III. Demography

Demography is concerned with the dynamics of population change, and the effects of such changes on larger social processes.

107. Demographic Analysis
123. Population
156. Current Issues in Population
- 156D. Population Perspectives on American Social Problems

IV. Urban Society

These courses are concerned with cities and with institutions that typically occur in urban settings. Courses in this grouping tend to be policy-oriented, in that they often focus on urban problems and their solutions.

120. The Community
121. Environment and Society
126. Urban Society
- 126R. Selected Topics in Urban Sociology
- 126U. Sociology of the Urban Underclass
127. Sociology of Urban Planning and Design
150. Principles of Social Welfare
172. Sociology of Crime and Delinquency
174. Criminal Justice and the Community
- 191B. Seminar in Community Development and Social Service

V. Mass Communication and Public Opinion

These courses are concerned with the formation and social impact of public opinion, through mass media (newspapers, radio, television) and other means. Students may also be interested in the following courses:

- Communication Studies 112, 113, 134; Political Science 120.
- 119A-B-C. Sociology of News
132. Public Opinion
133. Sociology of Mass Communications

VI. Race and Ethnic Relations

These courses are concerned with problems of racial and ethnic conflict, and with the development of ethnic communities. Students are referred to Black Studies, Chicano Studies, and Asian American Studies for related course listings.

- 126U. Sociology of the Urban Underclass
128. Interethnic Relations
- 128Q. Ethnicity, Nationalism, and Ethnonationalist Movements in the Modern World
137. Sociology of Black Nationalism
- 137A. Sociology of the Black Experience
- 137E. The Black Experience
- 139A-B. Sociology of Black-White Relations
144. The Chicano Community
- 154F. The Chicano Family
- 155R. Chicana Research Issues
- 155W. La Chicana

VII. Interpersonal Relations and Social Settings

These courses are concerned with understanding the dynamics of interaction of individuals in face-to-face and small scale settings.

136. The Analysis of Conversational Interaction
- 136Q. Special Studies in Conversational Interaction
141. Interpersonal Relations
- 141F. Social Psychology of Interpersonal Experience
- 141S. Interpersonal Processes
143. Small Groups
- 147M. The Social Psychology of Affliction
- 148A-B. The Analysis of Social Settings
149. Introduction to Ethnomethodology
169. Human Dignity

VIII. Socialization and Social Roles

These courses are concerned with the social-psychological development of individuals and the relation between the individual and society. Courses focus on the ways in which individuals are prepared for social roles ("socialization") and the development of identity. An important concern is with the development of sex roles, gender inequality, and the position of women in society.

- 140. Aging in American Society
- 142. Socialization, Self-Actualization, and Creativity
- 142H. Honors Seminar in Socialization
- 145. Adult Socialization
- 147. Current Issues in Social Psychology
- 151. Images of Women in Film
- 152A. Sociology of Human Sexuality
- 152B. Topics in Human Sexuality
- 152H. Advanced Study in the Sociology of Human Sexuality
- 153. Women and Work
- 153S. Advanced Undergraduate Seminar on Women and Work
- 154A. Sociology of the Family
- 154B. Special Topics in the Sociology of the Family
- 154C. Seminar in the Family
- 154F. The Chicano Family
- 155A. Women in American Society
- 155B. Sociological Perspectives on Women
- 155W. La Chicana
- 158. Personal Identity
- 172. Sociology of Crime and Delinquency
- 183A-B-C. Socialization and Personal Change
- 184. Sociology of the New Therapies

IX. Sociology of Law, Crime, and Criminal Justice

These are courses concerned with "deviant behavior" — behavior which violates social norms, and the response of society to such behavior, particularly through its legal institutions. Students are also referred to the listing of the Law and Society Program.

- 170. Sociology of Deviant Behavior
- 171. Sociology of Mental Illness
- 172. Sociology of Crime and Delinquency
- 173. Sociology of Law
- 174. Criminal Justice and the Community
- 175. Sociology of Punishment and Corrections
- 176. Sociology of Drug Use

X. Theoretical Issues in Social Science

These courses are concerned with the classic and contemporary framework for analyzing society. The nature and origins of such theories are examined and evaluated.

- 101. General Sociology (does not count as upper-division credit for the major)
- 135. Sociology of Knowledge
- 168. Science and Humanism
- 180A-B. Critical Perspectives on Industrial Society
- 181. Behaviorism
- 185. Development of Sociological Thought
- 187. History and Society

XI. Sociology of Institutional Settings

These courses are concerned with organizations and occupations in contemporary society — bureaucracies, schools, professions, alternative institutions, and other groups of individuals engaged in some common purpose.

- 102. Sociology, the University, and Society
- 133. Sociology of Mass Communications
- 159. Occupations and Professions in Modern Society
- 160. Social Relations in the Workplace
- 163. American Intellectual Institutions
- 164. Sociology of Education
- 166. Economy and Society
- 167. The Structure and Dynamics of

- Organizations
- 175. Sociology of Punishment and Corrections
- 190A-B. Internship in Organizational Settings

XII. Advanced Courses

These courses focus on special topics, and may take the form of small seminars or individualized tutorials. Enrollments are selective and require permission of the instructor.

A. Seminars and Classes in Special Topics

Each quarter the department offers one-time-only courses in special topics of unusual interest. Students should check the department office each quarter for current information on the following courses:

- 136Q. Special Studies in Conversational Interaction
- 142H. Honors Seminar in Socialization
- 146. Special Topics in Sociology
- 147. Current Issues in Social Psychology
- 152H. Advanced Study in the Sociology of Human Sexuality
- 154B. Special Topics in the Sociology of the Family
- 154C. Seminar in the Family
- 171S. Research Seminar in the Social Psychology of Mental Illness
- 193. Senior Seminar
- 194. Group Studies for Advanced Students
- 196H/HT. Honors Research Practicum in Sociology
- 197H. Honors Sociology

B. Individualized Studies or Tutorials

These courses are arranged jointly by the students and an instructor.

- 190A-B. Internship in Organizational Settings
- 191A. Field Projects in Community Development and Social Service
- 191C-D-E. Field Placement in the Helping Professions
- 198. Readings in Sociology
- 199. Independent Studies in Sociology

Honors Program in Sociology

As part of our participation in the College of Letters and Science Honors Program, the Department offers introductory-level sociology honors classes (Sociology 1H, 2H, and 3H), which are taught by the course professor, thus providing students with a unique opportunity for small group interaction with the instructor. A range of upper-division honors courses (142H, 152H, 197H) are also offered on a regular basis. In addition, eligible undergraduates may, with consent of the instructor, elect to fulfill an honors contract for any course. Eligible upper-division honors students may also participate in graduate courses numbered 200-299, by petition.

In addition to the general honors program, the Department of Sociology offers a two-quarter honors research practicum (196H-HT). Students enrolled in this seminar complete an original research project on a topic of their choice. To be eligible for the honors practicum (196H-HT) in sociology, students must have completed 105 units, including Sociology 1, 2, and 3, have a minimum 3.5 cumulative grade-point average with a 3.5 grade-point average in upper-division sociology courses, and have completed at least 16 units in upper-division sociology courses at UCSB. In addition, it is strongly recommended that students interested in the honors research practicum acquire competency in the methodological area related to their specific research topic. The sociology undergraduate adviser has a list of appropriate courses.

All qualified students are invited to apply at the Department of Sociology office before the end of the spring quarter prior to the year of requested

admission to 196H-HT. Students not meeting the minimal requirements may be nominated for admission by a member of the faculty. In addition, all students must submit a writing sample from a social science course excluding take-home examinations. All final decisions for admission to the honors program will be made by the program coordinator and will be based on the writing sample, standing in the major, and cumulative grade-point average.

Graduation with Distinction

To be eligible to graduate with Distinction in the Major, honors students must complete, with a grade of B or better, a minimum of two graduate seminars in sociology and the two-quarter honors research practicum (Sociology 196H-HT) which includes the presentation of an honors thesis. Students must also maintain a 3.5 cumulative grade-point average and a 3.5 grade-point average in upper-division sociology courses.

Alpha Kappa Delta

The Department of Sociology also sponsors the Tau of California Chapter of Alpha Kappa Delta, the national sociology honorary society. Membership in Alpha Kappa Delta is restricted to outstanding students who have completed a minimum of 90 units with a cumulative grade-point average of at least 3.5, and with a 3.5 GPA in at least 16 upper-division sociology units taken at UCSB.

GRADUATE PROGRAM

Master of Arts — Sociology

Admission

Because the M.A. program in sociology is designed to prepare students for the Ph.D. program, students should normally apply for admission to both. Applications are accepted for fall only; the deadline is March 31. In addition to the information required in the application for admission to graduate status, applicants must submit scores on the Aptitude Test of the Graduate Record Examination and a sample of written work in sociology.

Applicants should have training substantially equivalent to the undergraduate major in sociology at UCSB, including research methods, statistics, and the development of sociological theory. Students with inadequate backgrounds in these areas may be admitted, but they are expected to make up deficiencies during their first year of study.

Degree Requirements

Usually the M.A. degree is awarded according to Plan 1 of the university: 36 units of course work, of which at least 18 must be graduate units: submission of an acceptable thesis; and an oral comprehensive examination. The thesis is written under the supervision of the student's advisory committee, and prior to the comprehensive examination the student must have satisfied the committee's recommendations concerning the breadth and intensiveness of preparation, including theory, research methods, and formal analysis techniques. Required course work must be completed by the end of the quarter in which the examination is taken. In special cases, a student may petition to take the M.A. according to Plan 2, the requirements for which are the same as for Plan 1, including the theory, research methods, and formal analysis requirements, except that a research paper prepared under the supervision of an advisory committee is substituted for the thesis. Plan 2 is reserved, however, for students in highly exceptional circumstances, and students will normally pursue Plan 1.

To receive an M.A. degree the student must receive a 'pass' or higher grade on the comprehensive examination, to continue in the Ph.D. program, the student must receive a 'high pass' or an 'honor pass.' The M.A. program should normally be completed by the end of the second year, but a student may petition for an extension.

Doctor of Philosophy — Sociology

Admission

All candidates should have training substantially equivalent to that required for the B.A. and M.A. in sociology at UCSB, including courses in research methods, statistics, and the development of sociological theory. Students admitted with an M.A. in sociology who have not met these requirements must complete them within two years of being admitted to the Ph.D. program. If, within a period of two years, these requirements are successfully completed, the student will be admitted into the Ph.D. program. In addition to fulfilling the general requirements for admission to graduate status, the applicant must submit scores on the Aptitude Test of the Graduate Record Examination and a sample of written work in sociology.

Degree Requirements

Demonstration of competence in research methods appropriate to the student's area of major specialization is a requirement for the Ph.D. This competence may be demonstrated by examination, or by a grade of B or better in Sociology 201A, or 201B, or 201C, or an approved alternative course such as linguistics or computer programming, together with approval by one faculty member of a research paper usually initiated in Sociology 201 and completed in 596. This competence may also be demonstrated by an M.A. research paper.

Each student must pass a written preliminary examination in two areas of specialization, based on approved bibliographies in the selected areas. A qualifying oral examination, administered by a committee appointed by the Graduate Dean, follows the written examination and normally focuses on the student's major area of specialization and proposed research. No skill in a foreign language is required, but a student whose specialty requires knowledge of such a language will be required to demonstrate competence.

The candidate must complete a dissertation and will normally be called upon for an oral defense of it.

SOCIOLOGY COURSES

LOWER DIVISION

1. Social Organization

(4)
The systematic study of human society; the structure of social groups, institutions, and societies, and their relationships to cultural patterns.

1FS. Freshman Seminar

(4)
May not be repeated for credit.
A seminar specifically for freshmen discussing current topics of interest in sociology. Topics will vary depending on the professor teaching.

1H. Social Organization — Honors

(1)
Prerequisites: concurrent enrollment in Sociology 1 and consent of instructor. Students must meet departmental honors criteria.
Eligible students will be invited to enroll in the honors seminar which will generally be taught by

the course instructor. Such students will receive one unit for the honors seminar for a total of five units in Sociology 1-1H.

2. Social Psychology

(4)
An introduction to theories of social psychology used in sociology. Topics covered vary with instructor and may include analysis of the nature of "self" and personal identity, conformity and autonomy, persuasion and attitude change, dynamics of small groups, exchange theory, interpersonal relations, processes of personal growth, and their relationship with societal institutions.

2H. Social Psychology — Honors

(1)
Prerequisites: concurrent enrollment in Sociology 2 and consent of instructor. Students must meet departmental honors criteria.
Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor. Such students will receive one unit for the honors seminar for a total of five units in Sociology 2-2H.

3. Introduction to Quantitative Sociological Studies

(4)
Not open for credit to students who have completed PSTAT 33.
An introduction to the fundamentals of quantitative analysis to enable students to interpret findings of social research so they will be prepared for advanced course work in sociology and able to intelligently participate as citizens in an increasingly statistically oriented society.

3H. Introduction to Quantitative Sociological Studies — Honors

(1)
Prerequisites: concurrent enrollment in Sociology 3 and consent of instructor. Students must meet departmental honors criteria.
Eligible students will be invited to enroll in the honors seminar which will generally be taught by the course instructor. Such students will receive one unit for the honors seminar for a total of five units in Sociology 3-3H.

20. Personal Growth and Social Responsibility

(4) Friedell
This course will cover three major subject areas: personal growth, social psychological research, and social responsibility. Topics include motivation, emotions, conformity, cognitive dissonance, aggression, prejudice, exploration of personal values with regard to current social issues, and the relationship between attitude change and social change.

43. Introduction to Social Research

(4) Duncan,D.
Prerequisite: one course in sociology, anthropology, or political science, or consent of instructor.
Assumptions underlying scientific research. Science and values. Relation of theory to research. Elements of fieldwork, survey, and experimental methods.

44. Introduction to Quantitative Analysis in Sociology

(4) Wilson
Prerequisite: Mathematics 1 or equivalent. Serves as prerequisite for Sociology 104A-B-C. Satisfies major requirement for Sociology 3.
Techniques for describing and analyzing quantitative sociological data. Applications of elementary statistical methods to sociological problems.

48. Social Problems

(4)
This course will analyze the sources of social problems in modern industrial societies. We will discuss in survey form the sociological studies and theoretical propositions dealing with such things as crime, mental illness, war, urban problems, and problems of inter-nation relations.

91A. Field Placement in the Helping Professions: Relationships

(2) Staff
Prerequisites: consent of instructor. Enrollment by application only. No more than four units of 91A-B-C or D may be applied towards overall unit credit.
This course will explore issues in relationships, with emphasis on sexuality, self-esteem, and birth control. Students will be trained as peer health educators which includes study of self-awareness, communication skills, and values clarification within the context of relationship choices. Eating disorders are emphasized in spring quarter.

91B. Field Placement in the Helping Professions: Alcohol and Drugs

(2) Staff
Prerequisites: consent of instructor. Enrollment by application only. No more than four units of 91A-B-C or D may be applied towards overall unit degree credit.
This course presents issues involved in making realistic health choices about the use of alcohol and drugs. Through lecture and small group discussions, students study self-awareness, communication skills, and values clarification with emphasis on substance abuse. Students will be trained as peer health educators.

91C. Field Placement in the Helping Professions: Nutrition

(2) Staff
Prerequisites: consent of instructor. Enrollment by application only. No more than four units of 91A-B-C or D may be applied towards overall unit credit.
This course provides a focused study of the issues involved in making realistic health choices about nutrition. Through lecture and small group discussions, students will study self-awareness, communication skills, and values clarification with special emphasis on nutrition. Students will be trained as peer health educators.

91D. Field Placement in the Helping Professions: Stress Management

(2) Staff
Prerequisites: consent of instructor. Enrollment by application only. No more than four units of 91A-B-C or D may be applied towards overall unit credit.
This course will assist students to manage stress in their lives and to learn techniques to help them teach skills to others. Students will study self-awareness, communication skills and values clarification with emphasis on stress management.

98. Readings in Sociology

(1-4) Staff
Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department chair. May be repeated for credit to a maximum of eight units. No unit credit allowed toward the major.
Critical reviews and discussions of related topics in sociology under the guidance of a faculty member. Students wishing to enroll must prepare a short plan of study.

99. Introduction to Research in Sociology

(1-4) Staff

Prerequisites: 1) minimum 3.0 cumulative grade-point average; 2) consent of instructor and department chair. May be repeated for credit to a maximum of eight units.

Independent research under the guidance of a faculty member in the department. Course offers exceptional students the opportunity to undertake independent research or work in a research group. Students wishing to enroll must prepare a short plan of study.

UPPER DIVISION**101. General Sociology**

(4)

Not open to those who have had Sociology 1. The major concepts, principles, and problems of sociology.

102. Sociology, the University, and Society

(4) Flacks

Prerequisite: upper-division standing or one prior course in sociology.

Among the main topics are: society, the university, and the discipline. Subtopics include: social and personal responsibility, the university and social change, departmentalization of knowledge, decision making in the university, clientele of university, concept of academic freedom, student power, ethnic and other minorities, organization of profession of sociology, and professional vs. liberal education.

103. Methods of Sociological Research

(4) Straits

Prerequisite: upper-division standing or one prior course in sociology.

Fundamentals of designing, conducting, and analyzing social surveys. While the main focus is on survey techniques, problems of design and interpretation in experimental and observational studies are touched upon in terms of similarities and contrasts.

103L. Laboratory in Methods of Sociological Research

(2) Straits

Prerequisite: concurrent enrollment in Sociology 103.

Students will learn how to use computer data management and statistical programs (e.g., WYLBUR, SPSS, SAS) to solve exercises in data processing and interpretation.

104A-B-C. Fundamentals of Data Analysis in Sociology

(4-4-4) Berk R., Bielby W., Wilson

Prerequisites: Mathematics 1 and PSTAT 33 or equivalent. Sociology 3 does not serve as a prerequisite.

Basic techniques for the analysis of sociological data using structural equation models. Emphasis is on sociological application; the course will cover the use of bivariate, multivariate, and multiple-equation causal models in sociological research.

104AL-BL-CL. Laboratory in Data Analysis in Sociology

(2-2-2) Berk R., Bielby W., Wilson

Prerequisite: concurrent enrollment in Sociology 104A-B-C.

Practical application of methods learned in Sociology 104A-B-C using computer programs to estimate and study properties of sociological applications of statistical properties. Preparation of reports of analyses of data.

105. Laboratory in Group Research

(4) Schulman

Prerequisites: Sociology 103 and 143, or consent of instructor.

Practicum in laboratory methods of research in the behavior of small groups.

106. Computer Simulation of Social Processes

(4) Sonquist

Prerequisite: upper-division standing or one prior course in sociology.

Applications of computer simulation methodologies in the analysis of social and political processes.

107. Demographic Analysis

(4) Straits

Prerequisite: upper-division standing or a prior course in sociology.

Analysis of published demographic research with special reference to the accuracy of data from censuses and other sources; standardization and other methods for controlling differences in population composition; computation and use of rates and indexes, population estimates and projections.

108. Introduction to Mathematical Sociology

(4)

Prerequisites: Mathematics 30 and any two upper-division courses in sociology, or the consent of instructor.

Analysis of social systems through the use of mathematical tools; survey of structural, quantitative, and stochastic models.

109A. Introduction to Computing for Social and Behavioral Sciences

(4) Sonquist

Prerequisite: upper-division standing or one prior course in sociology.

Introductory computer science concepts, programming principles, and fundamentals of information processing as it applies to research and text processing in social science research.

109B. Computer Applications in the Social Sciences

(4) Sonquist

Prerequisites: Sociology 109A, Engineering 3, Mathematics 6A, or equivalent, or consent of instructor.

Survey of computer applications in the social sciences: statistical analysis, research data management, simulation, control of experiments, content analysis and analysis of text, information retrieval, etc.

109C. Special Topics in Computer Applications in Social Science

(4) Sonquist

Prerequisites: Sociology 109A, or equivalent, or consent of instructor. May be repeated for credit to a maximum of 12 units.

An advanced course dealing with topics selected by the lecturer. The emphasis will be on areas of computer applications within the social sciences such as research data base management, statistical computation, computer control of experiments, content analysis, information retrieval, and simulation of social systems.

110. Data Processing and Analysis

(4) Sonquist

Prerequisite: Sociology 3.

Course will focus on basic principles of data organization and statistical analysis employing computer based research techniques. Students will learn how to utilize available user-oriented statistical programs as an integral part of the research process.

111. Computers in Society

(4) Sonquist

Prerequisite: upper-division standing or one prior course in sociology.

An introduction to computers, their applications, and their impact on people and social institutions. Social problems created by computer use and remedies will be discussed. Information will be presented to urge constructive and creative thinking about technology, its uses, and its social impact.

112A-B. Practicum in Social Research

(4-4) Straits

Prerequisite: upper-division standing or one prior course in sociology.

This two-quarter sequence deals with study design, conceptualization, measurement, and data collection. Students will be working on a single research project conducted over two quarters.

113. Systems Analysis and Information System Design

(4) Sonquist

Prerequisites: Engineering 3 or Mathematics 6A or Sociology 109A or equivalent, or consent of instructor. This course is the same as ECE 113.

Introduction to principles and techniques involved in the analysis of information-processing requirements of large-scale organizations and the design and development of computer-based information systems. Includes overview of implementation, control, and evaluation phases of system development.

115. Minicomputer-Based Computer-Aided Instruction Systems

(4) Sonquist

Prerequisite: senior standing or consent of instructor. (This course is the same as ECE 115.)

For students who plan to utilize computers as teaching tools. Computer fundamentals, developing skills in a programming language. Programming techniques with applications to education problem-solving strategies. Techniques of utilizing the computer to assist in providing individualized instruction. CAI history, modes, languages, software, and hardware requirements. Methods of developing course-ware. Economics of CAI systems.

119A. Sociology of News

(4) Gold

Prerequisite: formal work on Daily Nexus, or other public media of communication.

Application of social science methodology to investigatory journalism. Study of social factors affecting the nature of news as it finally emerges in the mass media.

119B. Sociology of News

(4) Gold

Prerequisites: Sociology 119A or consent of instructor. Formal work on Daily Nexus, or other public media of communication. Maximum of four units only from Sociology 119A-B-C will count toward the 36 upper-division units for the major.

Continuation of work in Sociology 119A.

119C. Sociology of News

(4) Gold

Prerequisites: Sociology 119B or consent of instructor. Formal work on Daily Nexus or other public media of communication. Maximum of four units only from Sociology 119A-B-C will count toward the 36 upper-division units for the major.

Continuation of work in Sociology 119B.

120. The Community

(4) Appelbaum, Molotch, Nee

Prerequisite: upper-division standing or one prior course in sociology.

Structure and dynamics of the local community. Comparative and historical analysis of rural, urban, and suburban communities and neighborhoods. Study of organizations, power structure, status groupings, communication processes, socialization, factional conflict, social control, ecology, equilibrium, and change.

121. Environment and Society

(4) Molotch

Prerequisite: upper-division standing or one prior course in sociology.

Impact of social institutions on human-environment relations. Cultural conceptions of human-environment links. The present crisis and possible future.

122. Social Stratification

(4) Bielby W.

Prerequisites: Sociology 1, 2, and 3.

The nature of social classes and class relations, emphasizing contemporary studies of American society.

123. Population

(4) Straits

Prerequisite: upper-division standing or one prior course in sociology.

Population composition and change; differential fertility and morality of sociocultural groups; internal and international migration; population theory and national policies; problems in areas of population pressure.

124. Collective Behavior

(4) Shibutani

Prerequisite: Sociology 1 and 2 and upper-division standing, or consent of instructor.

Analysis of the expressive component of social life; critical evaluation of theories of crowd behavior; the political manipulation of emotional phenomena.

125. Intercultural Studies in Community Milieux Abroad

(4) Staff

Prerequisite: upper-division standing or one prior course in sociology.

Perceptions of differences in culture and social institutions. Contexts of contact: of the sojourner, foreign student, alien worker, immigrant, and scholar abroad. Intensive study of acculturation.

126. Urban Society

(4) Appelbaum, Molotch

Prerequisite: upper-division standing or one prior course in sociology.

Problems of the city (e.g., congestion, homelessness, violence), are examined in light of larger economic and social forces which structure urban life. Through use of slides depicting urban settings, causes and consequences of different ways urban settlements have been organized are considered.

126R. Selected Topics in Urban Sociology

(4) Friedland, Molotch

Prerequisite: Sociology 126 or consent of instructor. May be repeated for credit to a maximum of 12 units.

This course is designed to analyze selected urban policies in depth. Attention will be paid to the interaction between political, economic, and sociological processes. Different policies and different countries will be covered each time the course is offered.

126U. Sociology of the Urban Underclass

(4) Rolison

Prerequisite: upper-division standing or one prior course in Sociology.

This course examines conservative, liberal, and radical perspectives on class, poverty, and race and will allow a critical assessment of the social and political implications of the growing congruity between urban poverty and race in the eighties.

127. Sociology of Urban Planning and Design

(4) Applebaum

Prerequisite: Sociology 126 or consent of instructor.

Survey of sociological implications of city planning and urban design processes.

128. Interethnic Relations

(4) Staff

Prerequisite: upper-division standing or one prior course in sociology.

Patterns of racial and ethnic relations, with particular emphasis upon minorities in the United States.

128Q. Ethnicity, Nationalism, and Ethnonationalist Movements in the Modern World

(4) Staff

Prerequisite: upper-division standing or one prior course in sociology.

An examination of the significance of ethnic, regional, and nationalist movements in Europe and the Middle East, and the resurgence of organized efforts by minorities to attain a broader recognition of their rights of either autonomy or secession. Consideration is given both to the historical background and the contemporary social and political consequences of these movements.

129. Economy and Ethnicity in American Society

(4) Nee

Prerequisite: upper-division standing or one prior course in sociology.

Factors determining the ethnic stratification of American society will be examined in light of theoretical and empirical research on discrimination, ethnic economy, segmented labor markets, achievement motivation. The seminar seeks to combine both cultural and structural factors in explaining the differential socioeconomic achievement of ethnic groups in contemporary American society.

130. Comparative Social Development and Change

(4)

Prerequisites: Sociology 1, 2, and 3.

Theories of social change and the evolution of social systems.

131. Political Sociology

(4) Flacks

Prerequisite: upper-division standing or one prior course in sociology.

Social and cultural bases of the political process; the study of power and authority as reflecting the interplay of interests and values; analysis of continuities and discontinuities in the democratic political system.

131H. Politics and Religion in the City: The Case of Jerusalem

(4) Friedland

Prerequisite: upper-division standing or a prior course in sociology or religious studies. This course is the same as Religious Studies 131H.

This course examines relationships between religion and politics in Jerusalem. As a sacred center for Judaism, Christianity, and Islam, and

national center for Israelis and Palestinians, Jerusalem provides the unique opportunity to examine co-existing groups holding opposing world views.

131R. Sociology of the Modern State

(4) Flacks, Friedland

Prerequisite: Sociology 131 or consent of instructor. Course may be repeated once providing topics are different.

Study of the historical formation, organizational structure, and political processes of the modern state in the United States and Western Europe. The state will be studied as a representative institution, a mode of domination, and an institutional locus of societal contradictions using contemporary and historical empirical studies.

132. Public Opinion

(4) Gold

Prerequisite: upper-division standing or one prior course in sociology.

Conceptual analysis of public opinion in relation to notions of democratic behavior and social change. Problems of measurement, influence of the mass media, reference groups, and interpersonal relations. Effect upon contemporary American society.

133. Sociology of Mass Communications

(4) Gold, Molotch

Prerequisite: upper-division standing or one prior course in sociology.

Organization and processes of mass communications in American society and developing nations; effects of the mass media on social consensus, conflict, and innovation.

134. Social Movements

(4) Flacks

Prerequisite: upper-division standing or one prior course in sociology.

Developmental processes of movements seeking alterations in the social order; a comparative analysis of utopias, classical and contemporary liberalism, socialism, and communism.

134F. Film and Culture of the 1960s

(4) Flacks

Prerequisite: upper-division standing or one prior course in sociology. This course is the same as Film Studies 134F.

Examines prevailing currents of film and related cultural practices during the sixties. Focuses on world cinema as well as the social and political context from which it arose. Emphasis is American, but national concerns are situated within an international framework.

135. Sociology of Knowledge

(4) Appelbaum, Wilson

Prerequisite: upper-division standing or one prior course in sociology.

The creation, diffusion, and social influence of knowledge; thought forms and symbols as consensus-making devices; the social role of the intellectual.

136. The Analysis of Conversational Interaction

(4) Zimmerman

Prerequisite: upper-division standing or consent of instructor.

The analysis of naturally occurring conversations with an emphasis on understanding conversation as a form of social interaction. The course will relate the structures of conversational interaction to such issues as interpersonal power, dominance and submission, sexism, and stereotyping, as well as explore the relevance of this approach to classical sociological concerns.

136Q. Special Studies in Conversational Interaction

(4) Zimmerman

Prerequisites: Sociology 136 and consent of instructor.

Individual and group projects in the analysis of conversational interaction stressing the understanding of this approach through actual research.

137. Sociology of Black Nationalism

(4) Staff

Prerequisite: upper-division standing or one prior course in sociology.

Analysis of the historical and sociological sources of Black Nationalism with special emphasis on the implications of Black Nationalism for radical social change.

137E. Sociology of the Black Experience

(4) Rolison

Prerequisite: upper-division standing or one prior course in sociology.

This course will give a sociological overview of the experiences of Blacks in the United States from slavery to the present. Sociological analysis of the changing historical significance of Black poverty, the Black family, and the black worker in the United States will be presented.

138. The Sociology of Conflict

(4) Friedell

Prerequisite: upper-division standing or one prior course in sociology.

Conflict as a basic and continuous social process; relationships to social change and social organization; modes of resolving differences.

139A-B. The Sociology of Black-White Relations

(4-4) Fisher

Prerequisites: Sociology 1 or equivalent; students taking 139B must have taken 139A; or consent of instructor.

Selected problems of racism will be the focus of both (A) theoretical and (B) empirical study. This course will be an integral part of reassessment, re-evaluation, and change in patterns of racist super-subordination.

140. Aging in American Society

(4) Bielby, D.

Prerequisites: upper-division standing and a socialization or developmental psychology course or personal experience working with the elderly.

This course will survey and analyze aspects of growing old in American society. Attention is focused on the meaning of aging to the individual as topics including physical and mental health, retirement, leisure, sexuality, death, and dying are discussed

141. Interpersonal Relations

(4) Friedell, Schulman, Shibutani

Prerequisite: Sociology 2 or Psychology 102, their equivalent, or consent of instructor.

The social psychology of person-to-person interaction: perceptions, norms, and sentiments that develop in face-to-face contact.

141F. Social Psychology of Interpersonal Experience

(4) Friedell

Prerequisite: Sociology 2 or Psychology 102 or Sociology 141 or consent of instructor.

In a small group setting, students will explore person-to-person interaction; the norms and sentiments which influence face-to-face experience; and development of intimate relationships.

141S. Interpersonal Processes

(4) Schulman

Prerequisite: Sociology 2 or Psychology 102 or Sociology 141 or their equivalent or consent of instructor.

Through small group activity, students will consider processes of person perception, impression management, interpersonal communication, formation of interpersonal relationships, and formation of affect (liking/disliking). Students will analyze videotapes, participate in group analysis, and read empirical and theoretical literature in these areas.

142. Socialization, Self-Actualization, and Creativity

(4) Baldwin

Prerequisite: upper-division standing or one prior course in sociology.

The influence of people's social environment on their developing behavior. Attention devoted to exploration, play, creativity, self-actualization, showing how certain social environments are or are not conducive to full human development.

142H. Honors Seminar in Socialization

(4) Baldwin

Prerequisites: grade of A in Sociology 142 and consent of instructor. Must meet departmental honors criteria.

Advanced study in socialization for a selected group of students.

143. Small Groups

(4) Schulman

Prerequisite: Sociology 2, Psychology 1 or 101, Sociology 141 or Psychology 102; or consent of instructor.

The structure and dynamics of small groups, including the analysis of roles, interpersonal relations, and group characteristics; inter-group relations; field and laboratory research on small groups.

144. The Chicano Community

(4) Segura

Prerequisites: upper-division standing, or Chicano Studies 1A or 1B, or 1C, or a prior course in sociology. This course is the same as Chicano Studies 144.

Origins of the Chicano in rural Mexico; context of contact; patterns of settlement in the United States; the Chicano community; social culture, and social change; acculturation and generational patterns; community leadership and change.

145. Adult Socialization

(4) Bielby, D.

Prerequisite: Sociology 142.

The social development of individuals after the early childhood years. Data and theories will be presented relating to the development of the more complex social behaviors, cognitions, plans, etc., typical of socialized adults.

146. Special Topics in Sociology

(1-4)

Prerequisite: upper-division standing or one prior course in sociology. No more than eight units of major credit will be given, but course may be repeated up to a 16 unit maximum. Lectures in special areas of interest in contemporary sociology. Specific course titles to be announced by the department each quarter.

147. Current Issues in Social Psychology

(4) Scheff

Prerequisites: Sociology 2 and 103, their equivalents, or consent of instructor. Course may be repeated once if there is a different instructor.

An advanced course dealing with topics selected by the instructor. Emphasis is on areas of research in social psychology, such as the decision-making process, role analysis, and other current topics.

147M. The Social Psychology of Affliction

(4) Friedell

Prerequisite: consent of instructor.

Cognitive and emotional responses to distress and affliction; roles of victims and witnesses; patterns of attribution of responsibility; evaluation of effectiveness of individual and collective action.

148A. The Analysis of Social Settings

(4)

Prerequisites: Sociology 1 and 2.

The properties and interactive processes of social settings with emphasis on theories of the social organization of natural social settings and methods for studying them.

148B. The Analysis of Social Settings

(4)

Prerequisite: Sociology 1, 2, 148A, or consent of instructor.

Field methods for collecting and analyzing data on naturally occurring behavior and natural social settings; direct and indirect methods of observation. Students will actually engage in one or more field studies.

149. Introduction to Ethnomethodology

(4) Zimmerman

Prerequisite: upper-division standing or one prior course in sociology.

The course explores the ways in which people, through their practical commonplace activities, produce for themselves and for others a meaningful social world. We will look at the ways in which social settings are created by participants, at the role of conversation and descriptions in creating a sense of social structure, and the interdependence between what we see "out there" and how we see it.

150. Principles of Social Welfare

(4) Fisher

Prerequisite: upper-division standing or one prior course in sociology.

Basic concepts and methods of social work; the application of casework techniques; structure and function of public welfare agencies; social group work and community organizations.

151. Images of Women in Film

(4)

Prerequisite: upper-division standing or one prior course in sociology.

This course will examine the changing role and image of women in film from the 1930s to the present. Films by representative American and European directors will be shown.

152A. Sociology of Human Sexuality

(4) Baldwin, J.D. Baldwin, J.I.

Prerequisite: upper-division standing or one prior course in sociology.

Human sexuality as a social phenomenon; the influence of anatomy, physiology, and psychosexual development on sexual expression; masculinity and femininity in their social expression; theories of sexuality related to deviance.

152B. Topics in Human Sexuality

(4) Baldwin, J.D. Baldwin, J.I.

Prerequisites: Sociology 152A (formerly 152) and consent of instructor.

The course will present additional information about topics covered only briefly in Sociology 152A but of interest to the serious student.

152H. Advanced Study in the Sociology of Human Sexuality, Honors Seminar

(4) Baldwin J. D.

Prerequisites: completion of Sociology 152A with a grade of A and consent of instructor. Students must meet departmental honors criteria.

An honors seminar for advanced study in the sociology of human sexuality. Each student will research one to four topics in the field of sexuality, and will present four 40-minute summaries of that research.

153. Women and Work

(4) Berk, S.

Prerequisites: upper-division status; any upper-division sociology course.

The course will begin with readings and discussion of the sociological features of work in society. The role of women in the labor market will be explored, as well as their lives as unpaid workers in their own homes. Finally, more global issues of sexual inequality and social change will be discussed.

153S. Advanced Undergraduate Seminar on Women and Work

(4) Berk, S.

Prerequisites: grade of A- or better in Sociology 153; consent of instructor.

The seminar will focus on women's labor force participation, domestic labor, and the structural connections between the two. Through presentations of original research papers, students will explore the social structural features of gender inequality and implications for social change.

154A. Sociology of the Family

(4) Friedland, Schneider

Prerequisite: upper-division standing or one prior course in sociology.

A lecture course on family and household organization, past and present. Attention to contemporary issues in the American family focusing on gender, class, and cultural variation.

154B. Special Topics in the Sociology of the Family

(4) Staff

Prerequisite: Sociology 154A or consent of the instructor. Course may be repeated once providing topics are different.

A lecture course providing focused exposure to research topics in the sociology of the family. Topics may include violence within families, cross-cultural variations in family structure, family and the state, the family and economic structure, gender roles within families.

154C. Seminar in the Family

(4)

Prerequisites: Sociology 154A and consent of instructor.

This seminar will allow students to consider in depth current research in the area of the family. Students may also undertake their own research projects in conjunction with a faculty member.

154F. The Chicano Family

(4) Segura

Prerequisite: upper-division standing or one prior course in sociology or Chicano Studies 1A-B-C or consent of instructor. Same course as Chicano Studies 154F.

This course provides an overview of historical and contemporary research on Chicano families in the United States. Changing viewpoints on the

character of Chicano families and their implications with respect to policy issues are examined.

155A. Women in American Society

(4) Berk, S., Schneider

Prerequisite: upper-division standing.

The roles and life styles of women in various American subcultures and the ideologies developing around them.

155B. Sociological Perspectives on Women

(4) Berk, S., Schneider

Prerequisite: Sociology 155A or consent of instructor.

Advanced study in the sociology of women. Course format (seminar or lecture) and topic vary from year to year. Topics may include: the analysis of the status of women in the labor force, women's class position, the contemporary women's movement, theoretical and practical aspects of patriarchy.

155R. Chicana Research Issues

(4) Segura

Prerequisites: upper-division standing or one prior course in sociology or Chicano Studies 1A-B-C or consent of instructor. Same course as Chicano Studies 155R.

This course is designed to enable students to develop and implement a research project that explores in depth one or more facets of the Chicana experience. Students will select and gather information in one area of interest: family, health, education, or employment.

155W. La Chicana: Mexican Women in the U.S.

(4) Segura

Prerequisite: upper-division standing or one prior course in sociology or Chicano Studies 1A-B-C or consent of instructor. Same course as Chicano Studies 155W.

Examines existing research on native-born and immigrant Mexican women in the United States with emphasis on family, education, employment, and politics. Analysis of the Chicana experience organized by considering how interplay between class, race, and gender affects access to opportunity and equality.

156. Current Issues in Population

(4) Duncan, B; Straits

Prerequisite: upper-division standing or one prior course in sociology. Content varies from year to year; course may be repeated for credit to a maximum of 12 units.

Lectures and readings on several current population issues, such as income, aspirations, and fertility; migration of the poor; consequences of childbearing and child-spacing patterns; inequalities of death and illness; overpopulation; teenage pregnancy; and immigration policies.

156D. Population Perspective on American Social Problems

(4) Duncan, B.

Prerequisites: Sociology 3 or equivalent required; Sociology 123 recommended. Upper-division students only.

Course will cover ways in which persons' position in the population structure influence their perceptions of problems (e.g., affirmative action for women workers) as well as ways in which population dynamics, distribution, or composition create or intensify problems (e.g., tempo of career advancement, marriage-market balance).

157. Radicalism in American Life

(4) Flacks

Prerequisites: Sociology 131, 134.

An analysis of the social sources and impacts of radical ideologies and organizations on American life and politics in the twentieth century.

158. Personal Identity

(4) Shibutani

Prerequisites: Sociology 1 and 2; upper-division standing or consent of instructor.

A sociological approach to motivation; the formation of self-concepts; self-regulation as a social process.

159. Occupations and Professions in Modern Society

(4)

Prerequisite: upper-division standing or one prior course in sociology.

A sociological analysis of the character and function of various occupations and professions in contemporary society. Emphasis is placed upon current sociological theory and research in this area of sociological inquiry.

160. Social Relations in the Workplace

(4) Bielby, W

Prerequisite: Upper-division standing or one prior course in sociology.

Management and worker organizations, formal and informal. Accommodation among these organizations, and interaction between them and the community.

161. Sociology of People's Republic of China

(4) Nee

Prerequisite: Sociology 1 or 101.

The course will deal primarily with China after the 1949 revolution. The major emphasis will be on the social and political institutions in the People's Republic of China.

163. American Intellectual Institutions

(4) Duncan, B.

Prerequisites: senior status; completion of one upper-division social science course.

Changing character of the intellectual system, especially universities and the science-based research institutes, in a postindustrial society. Relations with the economy and polity. Interaction of technological development (i.e., the computer) and advances in 'intellectual technology' (e.g., simulation of social processes).

164. Sociology of Education

(4) Duncan, B.

Prerequisite: upper-division standing or one prior course in sociology. Not open to students who have received credit for Education 125.

Changing character of education in complex societies; its relation to political, economic, and technological institutions; and its effect on individual and community behavior and development.

166. Economy and Society

(4) Bielby, W., Friedland, Nee

Prerequisite: upper-division standing. Course may be repeated once with different instructor and course content.

This course will consider the relationship between economy and society. The course will analyze non-market determinants of market phenomena, as well as the ways in which markets impinge upon non-market institutions, whether state, family, or community. The topics included in the course will vary.

167. The Structure and Dynamics of Organizations

(4) Bielby W., Friedland, Sonquist

Prerequisite: upper-division standing or a prior course in sociology.

Institutional analysis of administrative structures and voluntary associations: informal organization, ideology, bureaucracy, decision making, and morale.

168. Science and Humanism

(4) Baldwin

Prerequisite: upper-division standing or one prior course in sociology.

Modern man is highly dependent on science. How does science shape our society, our values, our behaviors, our survival? Are the influences humane? We will investigate modern trends in humanistic and scientific values and how these values affect our lives.

169. Human Dignity

(4) Friedell

Prerequisites: upper-division standing or one prior course in sociology and consent of instructor.

The concept of human dignity; human dignity and theories of human nature; case, laboratory, and field studies; applications to self-esteem and human rights.

170. Sociology of Deviant Behavior

(4) Berk, S.

Prerequisite: upper-division standing or a prior course in sociology.

Introduction to the sociological study of conformity and deviance, with emphasis on processes of social control.

171. Sociology of Mental Illness

(4) Scheff

Prerequisite: upper-division standing or a prior course in sociology.

Sociological analysis of mental disorder: the cultural context of health and illness, social processes in the definition, recognition, and treatment of mental illness.

171S. Research Seminar in the Social Psychology of Mental Illness

(4) Scheff

Prerequisite: Sociology 171.

Introduction to research on emotion response cycle, using videotapes. Scanning, rating, and reliability techniques. Training in use of the Facial Action Coding System (FACS). Data collection for research paper.

172. Sociology of Crime and Delinquency

(4)

Prerequisite: upper-division standing or one prior course in sociology.

Theories of the genesis of delinquency and crime; factors in the organization of delinquent and criminal behavior from the points of view of the person and group; delinquent and criminal behavior systems.

173. Sociology of Law

(4) Berk, R.

Study of the social and cultural factors underlying the development, maintenance, and change of legal structures and processes, and analysis of theories of jurisprudence.

174. Criminal Justice and the Community

(4) Berk, R., Wilson

Prerequisite: Sociology 1.

Sociological analysis of law enforcement systems and court systems; police discretion, differential implementation of the criminal law; negotiation in criminal justice decisions.

175. Sociology of Punishments and Corrections

(4)

Prerequisite: upper-division standing or one prior course in sociology.

Theories of punishment and treatment used in dealing with convicts and juvenile delinquents; analysis of the systems of behavior modification used by probation, prison, and parole workers.

176. Sociology of Drug Use

(4) Staff

Prerequisite: Sociology 1.

This course will deal with such topics as the demographic patterns of drug usage, socialization into and out of drug subcultures, criminalization and decriminalization of various drugs, as well as drugs as they pertain to women, youth, and minorities. Cross-cultural approaches to drug use as well as treatment modes will be discussed. (Generally offered only in summer session.)

180A-B. Critical Perspectives on Industrial Society

(4-4) Appelbaum

Prerequisite: upper-division standing or one prior course in sociology.

A: From social philosophy to Marx. The foundations of critical theory, its relationship to early social science, and to social changes in the nineteenth century. Thorough examination of dialectics as the basis for both structural and critical analysis.

B: Post-Marxian critical and structural theory. The central focus will be on theoretical issues in contemporary society, for example: the problem of ideology; the problem of rationality; the role of science and technology in contemporary ideology and social development.

181. Behaviorism

(4) Baldwin

Prerequisites: upper-division standing or a prior course in sociology, and consent of instructor.

A study of behaviorism, a scientific paradigm for the objective, empirical study of human behavior. Readings of behaviorists, including Mead, Thorndike, Pavlov, Skinner, and other contemporary writers will be used to understand the origins, development, strengths, and weaknesses of behaviorism.

183A-B-C. Socialization and Personal Change

(4-4-4) Fisher

Prerequisites: Sociology 1 and some acquaintance with group process theory and/or practice.

This course deals with the effects of socialization on values and behavior with special reference to problems of race, gender, and social class. The course is designed to enable students to understand and reassess their values and practices in terms of theories of socialization and group process.

A: The focus will be on mastery of theoretical material on socialization and a format for further work. Selected literatures on socialization and its impact on the person will be stressed.

B: The emphasis this quarter will be on identification of distinctive elements in the socialization history of each class member.

C: During this quarter we will explore methods of bringing about change in values and behaviors with special emphasis on those typified as "racist," "sexist," or "exploitative."

184. Sociology of the New Therapies

(4) Fisher

Prerequisite: upper-division standing or one prior course in sociology.

Provides a description of several new approaches to mental health which includes their history, dynamics, and effectiveness. Will include an analysis of the social and intellectual sources of these new approaches.

185. Development of Sociological Thought

(4) Appelbaum, Wilson

Prerequisite: upper-division standing or a prior course in sociology.

The outstanding European and American figures and idea systems in the development of sociological thought are discussed.

187. History and Society

(4) Friedland

Prerequisite: upper-division standing or a prior course in sociology.

Sociological approaches to the study of history, analyzing cases such as the Protestant Reformation, French Revolution, Nazi Movement, rise of capitalism and the Nation State, the welfare state. Topics will vary drawing upon diverse theoretical perspectives, including functionalist, marxist, feminist, cultural, and ecological viewpoints.

190A-B. Internship in Organizational Settings

(2-12, 2-12) Bielby, W., Flacks, Friedland, Gold

Prerequisites: upper-division standing in a social or behavioral science; 3.0 overall grade-point average; instructor approval required.

Sociology 190B is limited to Capitol Hill interns who are not political science majors. NOTE: restrictions limit the total number of p/np units applicable to the major, see "requirements for the major" information. May be repeated to a maximum of 12 units, but only 8 units combined may be applied toward credit in the major.

Internship in an organization. Students will conduct observations and write a research paper on their experience. Individualized readings relevant to the setting are assigned.

191A. Field Projects in Community Development and Social Service

(1-4)

Prerequisites: Sociology 1 and consent of instructor. May be taken only P/NP. A maximum of six units of Sociology 191A-C-D-E combined may be applied towards degree requirements, and only four units of these may be applied towards the sociology major.

The problems, dilemmas, and potentialities of service institutions (both established and alternative), the "helping professions," and voluntary organizations are explored through direct participation and observation in specific community settings.

191B. Seminar in Community Development and Social Service

(4)

Prerequisites: Sociology 191A and consent of instructor. Open only to students with concrete fieldwork experiences.

Systematic exploration of the problems of institutional and community development, of the dilemmas of social service institutions and helping occupations, of the potentialities and constraints on the creation of social and cultural alternatives.

191E. Field Placement in the Helping Professions: Peer Health Education

(1) Staff

Prerequisites: completion of Sociology 91A-B-C or D. Consent of instructor and department chair. This course may be repeated for credit for a maximum of six units, four of which will count towards the sociology major. Classes may be taken P/NP only.

This course allows students who have completed Sociology 91A-B-C or D to apply for field placement. Acceptance into this program allows students the opportunity to facilitate discussion groups about health related topics for their peers. Offered in conjunction with the Student Health Services.

192. Projects in Computer Science

(4) Sonquist

Prerequisite: consent of instructor. May be repeated for credit with consent of instructor but with the limit of 12 units for the three courses total. Mathematics 192, ECE 192, and Sociology 192 combined.

Projects in computer science for advanced undergraduate students.

193. Senior Seminar

(4) Staff

Prerequisites: consent of instructor required. Open only to sociology majors who have completed 20 or more units of upper-division course work in the major. May be repeated once for credit if topic and instructor are different.

A seminar intended to represent a culminating experience for majors. The focus will be on a topic or theme that permits intensive analysis of methods and problems of social inquiry. Topics will vary with the instructor.

194. Group Studies for Advanced Students

(2-5) Staff

Prerequisite: consent of instructor. This course may be taken a total of three times.

Intensive study and research.

195H. Sociology Honors Colloquium

(2) Staff

Prerequisites: Sociology 1; must meet departmental honors criteria or consent of instructor. Honors students are expected to enroll one time per year. May be taken three times for credit for a total of six units.

In conjunction with the sociology colloquium series, this course will address issues and topics presented by the speakers. Participating students will be expected to read assigned materials and participate in discussions.

196H-HT. Honors Research Practicum in Sociology

(4-4)

Prerequisite: admission to the honors program in sociology.

A two-quarter sequence leading to the preparation and presentation of the honors thesis. During the first quarter, students will develop research topics and appropriate methodologies. General issues of sociological research will be raised and discussed, including the relationship between theory and method. During the second quarter, students will complete their research, write their theses, and present their results orally to the seminar.

197H. Honors Sociology

(4) Staff

Prerequisites: students must have completed Sociology 1, 2, 3, and one upper-division sociology course and meet sociology honors criteria or by consent of instructor. Course may be repeated to a maximum of eight units.

An undergraduate seminar for honors students. Topics will vary by instructor.

198. Readings in Sociology

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in sociology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Students may apply a maximum of 12 units of 198/199 courses combined to the sociology major.

Readings in sociology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

198H. Honors Reading Projects in Sociology

(1-5) Staff

Prerequisites: Sociology 1; students must 1) have attained upper-division standing; 2) have a minimum 3.5 grade-point average; 3) have completed at least two upper-division courses in sociology and must meet departmental honors criteria or consent of instructor.

Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Students may apply a total of 12 units of 198, 198H, and 199 combined to the sociology major.

Designed for honors reading projects under the guidance of a faculty member. Students wishing to enroll should prepare a short plan of study.

199. Independent Studies in Sociology

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in sociology. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Students may apply a maximum of 12 units of 198/199 courses combined to the sociology major.

Independent studies in sociology under the guidance of a faculty member in the department. Students wishing to enroll should prepare a short plan of study.

GRADUATE COURSES**200A-B-C. Sociological Theory**

(6-6-4) Appelbaum, Wilson

Central currents of sociological theory, beginning with Marx, Durkheim, and Weber, and continuing into contemporary theoretical issues.

201A-B-C. Advanced Research Methods

(4-4-4) Schulman, Sonquist

Prerequisites: Sociology 103 and 104A-B or equivalent.

Sociology 201A provides advanced training in survey techniques. Sociology 201B is concerned with experimental methods; and Sociology 201C is devoted to methods for collecting and analyzing data on naturally occurring behavior.

202. Issues in Sociological Inquiry

(4) Gold

Prerequisites: Sociology 103 and 104 or consent of instructor.

Currently relevant issues which fall somewhere between those systematically treated in the philosophy of science and those systematically treated in courses dealing with problems of theory construction and research design.

203A-B-C. Theory and Method in Sociology

(4-4-4) Berk, R.

Prerequisite: Sociology 103 or consent of instructor.

A three-quarter seminar in which the relationships between sociology and other social sciences are considered in the context of particular substantive issues: crime, marriage and divorces, unemployment, underdevelopment, and the like. A paper will be required integrating the issues discussed.

204A-B. Advanced Statistics

(4-4) Berk, R., Bielby W., Gold

Prerequisites: Sociology 103 and 104, or equivalent.

204C. Topics in Advanced Data Analysis

(4) Staff

The course may be repeated twice providing the topics are different.

This seminar will deal with topics of current interest in the area of data analysis and will give participants "hands-on" experience in using the new techniques with real data. Participants will analyze data of their choosing and will write up the results in journal article form. Technical assistance and some data archives will be provided by the sociology computing facility.

205A-B-C. Data Analysis in Sociology

(4-4-4) Berk, R., Bielby W., Wilson

Prerequisites: Sociology 44 or equivalent; Sociology 205A is prerequisite to Sociology 205B, and Sociology 205B is prerequisite to Sociology 205C.

A: Analysis of two-variable relationships with emphasis on regression models. Students are required to attend lectures in Sociology 104A.

B: Sociological applications of ordinary and generalized least-squares. Practical use stressed through exercises with actual sociological data. Students are required to attend lectures in Sociology 104B.

C: Application of multiple-equation models to sociological data and advanced topics in single-equation and interpretation models. Emphasis in exercises on analysis of actual sociological data. Students are required to attend lectures in Sociology 104C.

205AL-BL-CL. Laboratory for Data Analysis in Sociology

(2-2-2) Berk, R., Bielby W., Wilson

Prerequisite: concurrent enrollment in Sociology 205A-B-C.

Laboratory in quantitative data analysis using computer programs to estimate and study properties of sociological applications of statistical properties.

206. Intermediate Methods of Sociological Research

(4) Straits

Prerequisite: Sociology 3 or equivalent.

Review of fundamentals of designing, conducting, and analyzing social surveys. Problems of design and interpretation in experimental and observational studies will be discussed. Students will be required to attend lectures in Sociology 103.

206P. Intermediate Methods of Sociological Research Practicum

(2) Straits

Prerequisite: concurrent enrollment in Sociology 206.

A research practicum in which students use computer data management and statistical programs (e.g., WYLBUR, SPSS, SAS) to solve exercises in data processing and interpretation.

207A-B-C. Sociological Theory

(4-4-4) Wilson

Material covered equivalent to that offered in Sociology 200A-B.

Fundamental issues in contemporary social theory from their emergence in the Enlightenment, through the writings of Marx, Durkheim, and Weber, to present day controversies.

208. Formal Analysis in Sociology

(4) Staff

Prerequisite: Philosophy 31 or consent of instructor.

Clarification of existing sociological theories by resolution into explicit form. Special attention to axiomatic method.

209A-B-C. Evaluation Research Practicum

(4) Berk, R.

Prerequisite: a working knowledge of multivariate statistics and research design at about the level taught in the first year of graduate social science programs.

An interdisciplinary research practicum in which students undertake actual evaluations of social programs. Each year the class selects a subset of projects from those the instructor or the students have been able to generate, and by the end of the academic year produces research reports made available to interested practitioners.

210. Seminar in Ethnomethodology

(4) Zimmerman

The study of the properties making up every day practical reasoning.

211A-B-C. Field Research in Sociology

(4-4-4) Shibutani, Nee

The organization and execution of research in natural settings; analysis of field data and documentary evidence; problems of comparative history and analytic induction.

220A-B-C. Origins and Development of Critical Sociology

(4-4-4) Flacks, Appelbaum

This three-quarter sequence will introduce graduate students to critical sociology. The first quarter will focus on Marx's early works and philosophic issues; the second will focus on Marx's political sociology and theory of the state; and the third quarter will cover political economy and Neo-Marxist theory generally.

222. Social Stratification

(4) Staff

Advanced study of the nature of social classes and class relations, emphasizing contemporary studies of American society.

224. Seminar in Collective Behavior

(4) Staff

Current research, theories, and concepts of collective behavior will be considered.

226A-B. Human Ecology

(4-4) Friedland, Molotch

Prerequisite: graduate standing or consent of instructor.

This two-quarter sequence is designed to provide a comprehensive examination of issues relating to urban settlement as a locus of production and consumption patterns. Approaches include the classic formulations of urban ecology and locational theory and more contemporary derivations as currently practiced in urban geography, economics, and sociology. The first quarter is designed primarily for explication and review. The second quarter is organized around presentations by students and faculty on specific topics which serve as the basis of term papers, dissertation projects, and ongoing faculty research.

228A-B. Selected Problems in American Racism

(4-4) Fisher

A: (Racism in the United States as a social institution) Primary emphasis will be given to theoretical treatments of racism, and to locations within social structure wherein theoretical claims can be assessed. The relevance of theoretical claims, and analysis derived therefrom, for action and for policy imperatives, will be emphasized.

B: (Field explorations and research) It is expected that each student will come to the seminar with an area of interest in the study of racism formulated and will evolve a theoretical viewpoint within which to articulate this interest. The major work of the seminar will be the development and

implementation of a theoretically relevant research design and a write-up which includes presentation, analysis, and criticism of results.

229. Race (Ethnicity) and the Political Process: A Practicum

(4) Fisher

Sociological aspects of the political process and political participation by racial (ethnic) minorities in the United States. The degree and kind of involvement in the political process, as well as the consequences of this, will be explored. Emphasis will be given to field experience and its analytic meaning.

230. Seminar in Social Change

(4) Staff

Recent theories of sociocultural dynamics and change, with special emphasis on modern systems theory and cybernetic principles as they apply to social change.

231. Seminar in Political Sociology

(4) Flacks, Friedland

Study of the social and cultural bases of the political process.

232. Public Opinion and Mass Communication

(4) Gold

Selected topics in sociological analysis of public opinion and mass communication.

239. Sociology of Law

(4) Staff

Selected topics in the sociological analysis of legal structures and processes, and of theories of jurisprudence.

240. Pragmatism and American Sociology

(4) Shibutani

Analysis of the theoretical and methodological presuppositions underlying use of the process model in American sociology

241. Seminar in Interpersonal Relations

(4) Scheff

Advanced study of the social psychology of person-to-person interaction: perceptions, norms, and sentiments that develop in face-to-face contact.

242. Seminar in Language and Social Interaction

(4) Zimmerman

Prerequisite: Sociology 136 or consent of instructor.

The seminar will explore selected topics in the analysis of naturally occurring conversation with the emphasis on conversational exchange as a form of social interaction.

243. Practicum in Social Psychology

(4) Scheff, Shibutani

Advanced development of topics in social psychology. Consideration of theory and concepts as well as the design and execution of empirical research will be included.

244. Seminar in Socialization

(4) Baldwin

Selected topics in social development and social learning theory will be discussed.

254. The Family

(4) Schneider

Selected topics in sociological analysis of family and household arrangements.

255. Sociological Perspectives on Women

(4) Berk, S., Schneider

This course will analyze the social, cultural, and economic roots of the inequality of women. It will

also examine how change in female roles and position is related to institutional change (a cause and effect).

258. Seminar on Social Control

(4) Shibutani

An introduction to the social psychology of John Dewey and George H. Mead.

263A-B. Seminar on Religion and Societal Change

(4-4) Friedland, Hecht

This course is the same as Religious Studies 263A-B. Sociology 263B may be repeated for credit.

This seminar examines the role of religion in societal change. The first quarter will discuss major theories from Durkheim and Weber to Rokkan and Foucault. The second quarter will consider specific cases which will vary from year to year.

264. Sociology of Education: Seminar

(4) Staff

The relationship of education to the political, economic, and technological institutions. The study of schools and universities as complex organizations and of teaching, both in the school and university, as a profession.

266. Economy and Society

(4) Bielby, W., Friedland, Nee

Course may be repeated with different instructors and course content.

This course will consider the relationship between economy and society. Students will analyze non-market determinants of market phenomena, as well as the ways in which markets impinge upon non-market institutions. Topics included in the course will vary.

267. Seminar in Complex Organizations

(4) Staff

270. Deviant Behavior

(4) Scheff

An introduction to research on social interaction, using the controversy over the labeling theory of mental illness as an example. Development of a theory of social action, and a methodology appropriate to it.

271. Sociological Analysis of the Therapeutic Process

(4) Fisher

Prerequisites: some acquaintance with the writings and life of Sigmund Freud and/or one or more of the newer "therapies," plus some work in sociology.

Exploration of some social and philosophical issues entailed in the idea of treatment or therapy, and a consequent recasting of some traditional sociological ideas such as anomie, alienation, etc. Examination of the meanings of the therapeutic process as a social ethic.

272. Seminar in Criminology

(4)

Selected topics in the sociology of crime, delinquency, criminal justice, and corrections.

285A-B. Central Themes in Classical American Sociology

(4-4) Molotch

The course will focus upon central issues and themes in traditional American sociology. Areas to be explored are: demography, human ecology, and urban sociology, complex organizations, sociology of law and criminology, deviance, sociology of religion, marriage and family, collective behavior, political sociology and social stratification, and social psychology.

290A-B-C. Teaching Assistant Training Seminar

(4-4-4)

Prerequisites: this three-quarter sequence is required of all entering graduate students. Attendance at the departmental colloquia series is required as part of this course. S/U grading only; no credit allowed toward advanced degree.

The professional roles of sociologists as teacher, researcher, and colleague will be explored. Classroom techniques will be analyzed using video self-criticism and constructive feedback. Colloquia presentations will be considered as alternative modes of teaching effectiveness. Faculty presentations on their own pedagogic methods and current research activity will be included.

ADVANCED GRADUATE STUDY AND RESEARCH COURSES**501. Apprentice Teaching**

(4) Staff

Prerequisite: Sociology 290A-B-C and teaching assistant or associate status. May be repeated for credit; units do not fulfill M.A. unit requirements.

The application of research and theory to classroom practice in the teaching of undergraduate sociology courses. At the teaching assistant level, faculty will supervise individual students as they lead discussion sections, prepare and grade examinations, read written assignments, and engage in individual consultations with undergraduates. Associates will be responsible for courses in their entirety. Weekly meetings with instructor are required.

502. Research Assistance Practicum

(2-4) Staff

Prerequisites: research assistant status; consent of instructor. Units dependent upon percentage of time hired: 25% = 2 units; 50% = 4 units. May be repeated for credit; units do not count toward M.A. unit requirements.

Content will vary with individual students, each of whom will be instructed in the practical aspects of doing research in the area employed—bibliographical work, interviewing, statistical analyses, or questionnaire construction and analysis. Weekly group meetings with instructor are required.

504. Professional Problems

(4) Staff

Units do not count toward M.A. unit requirements.

Practical problems frequently encountered by graduate students and assistant professors will be identified and analyzed. These include proposal writing, article writing, selecting the right journal or book publisher, preparing a vitae, locating job opportunities, and participating in the "politics" of colleges and universities, as well as academic departments.

591. Graduate Workshop in Sociological Research

(4) Staff

May be repeated for credit; units do not fulfill M.A. unit requirements.

Presentation of research completed, in progress or proposed, with faculty in attendance. Students are expected to offer critical and useful comments on research.

594. Special Topics

(4) Staff

May be repeated for credit on approval of department chair.

Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies

(4) Staff

May be repeated for credit on approval of department chair.

Critical review of research in selected fields.

596AA-ZZ. Directed Reading and Research

(2-5) Staff

May be repeated for credit on approval of department chair. No more than half the graduate units required for the M.A. may be taken in Sociology 596. Individual tutorial. Plan of study must be approved by department chair.

597AA-ZZ. Individual Study for M.A. and Ph.D. Examinations

(4-8) Staff

Units do not count toward graduate degrees. Maximum of 24 units per examination.

Normally taken with the student's committee chair.

598. M.A. Thesis Research and Preparation

(1-12) Staff

Units do not count toward graduate degree.

Research and preparation for the masters thesis. Normally taken with the student's M.A. committee chair.

599AA-ZZ. Ph.D. Dissertation Preparation

(2-6) Staff

Maximum of 12 units total.

Normally taken with the student's committee chair.

Spanish and Portuguese

Department of Spanish and Portuguese, Phelps Hall 4206; Telephone (805) 961-3162.

Department Chair: Frederick G. Williams.

Faculty

Carlos H. Albarracín-Sarmiento, P.L., University of La Plata, Professor Emeritus

José Luis L. Aranguren, Ph.D., University of Madrid, Professor Emeritus

Graciela Ascarrunz-Gilman, Ph.D., UC Davis, Lecturer with Security of Employment (*Spanish language classes*)

Juan Bautista Avalu-Arce, Ph.D., Harvard University, Professor (*Golden Age Spanish literature, Don Quijote, medieval Spanish literature, Spanish-American colonial literature*)

Pablo Avila, Ph.D., Stanford University, Professor Emeritus

Carlos García Barrón, Ph.D., UC Los Angeles, Professor (*18th- and 19th-century Spanish literature, Peruvian literature*)

David Bary, Ph.D., UC Berkeley, Professor (*20th-century Spanish and Spanish-American literature*)

Maria L. Belchior-Pontes, Ph.D., University of Lisbon, Professor (*Portuguese literature, poetry of the 16th, 17th, and 20th centuries*)

Jorge Checa, Ph.D., Princeton University, Assistant Professor (*Golden Age Spanish literature*)

Victor F. Fuentes, Ph.D., New York University, Professor (*19th- and 20th-century Spanish literature, contemporary Latin American drama and poetry*)

Marta Gallo, P.L., University of Buenos Aires, Professor (*contemporary Spanish-American fiction, linguistics and literary theory*)

Mireya Jaimes-Freyre, Ph.D., Columbia University, Associate Professor (*Spanish-American literature, Modernism, Black and social poetry*)

Francisco A. Lomelí, Ph.D., University of New Mexico, Associate Professor (*Spanish-American literature, Spanish language*)

Nélida López, B.A., Instituto Superior del Profesorado, Buenos Aires, Lecturer with Security (*Spanish language and translation*)

Enrique Martínez-López, Ph.D., University of Madrid, Professor (*16th- and 17th-century Spanish literature, Brazilian colonial literature*)

Giorgio Perissinotto, Ph.D., Columbia University, Associate Professor (*Hispanic linguistics, medieval literature, phonology, dialectology, bilingualism, sociolinguistics*)

Allen W. Phillips, Ph.D., University of Michigan, Professor Emeritus

Eda Ramelli, Doctora en Letras, National University of Mexico, Professor Emerita

Eduardo Raposo, Ph.D., University of Lisbon, Assistant Professor (*Spanish and Portuguese linguistics*)

Harvey L. Sharrer, Ph.D., UC Los Angeles, Professor (*medieval Hispanic languages and literature, comparative medieval literature*)

Frederick G. Williams, Ph.D., University of Wisconsin, Associate Professor (*Portuguese, Brazilian, and Spanish-American literature*)

Robert E. Wilson, M.A., University of Arizona, Lecturer Emeritus

The Department of Spanish and Portuguese offers undergraduates an opportunity to master the four fundamental linguistic skills — speaking, understanding, reading, and writing — in Spanish and Portuguese and to study the literary, cultural, and linguistic heritages of the Spanish- and Portuguese-speaking peoples. The department offers the B.A. degree in Spanish and in Portuguese; the M.A. degree with specialties in Hispanic language and culture, in Spanish and Spanish-American literature, in Hispanic linguistics or studies in bilingualism, and in Hispanic, Portuguese, and Brazilian literatures; and the Ph.D. degree with emphasis in either Spanish or Portuguese.

Students interested in a Spanish or Portuguese major may meet with the department chair and advisers on the first day of each quarter. Resource persons in the department office are available on a regular basis to advise on academic matters.

After completing specific prerequisites, students with a bachelor's degree in Spanish or Portuguese are eligible to pursue a California teaching credential. Interested students should discuss their plans as soon as possible with the credential adviser in the Graduate School of Education to insure that their undergraduate preparation for the credential program is suitable. Successful completion of an advanced degree in Spanish is required for issuance of the Community College Instructor's Credential. Students interested in the related professional preparation program should contact the credential adviser prior to the fall quarter of the year in which the advanced degree will be completed.

Jorge de Sena Center for Portuguese Studies. The Jorge de Sena Center for Portuguese Studies provides support for teaching and degree programs and promotes the study of the literatures, language, and cultures of the Portuguese-speaking world. Services and activities include awarding student scholarships and stipends; sponsoring the Summer Institute in Portuguese; hosting an annual colloquium; maintaining the Center library; and sponsoring a publications series. The Center is named in memory of the late UCSB professor, and is made possible by an

endowment from the Calouste Gulbenkian Foundation. Student applications for scholarships and stipends should be made to the director of the Center.

Portuguese Summer Institute. Each summer the department offers a full range of courses in Portuguese studies through the Portuguese Summer Institute, ranging from beginning intensive Portuguese to upper-division courses in language, culture, and Luso-Brazilian literatures. Participants have the opportunity to reside in a language house that provides special lectures, conversation hours, and informal gatherings. Scholarships are available to qualified applicants, and further information may be obtained from the Department of Spanish and Portuguese.

Tinta, Scholarly Journal. The department's publication gives graduate and undergraduate students the opportunity to gain valuable experience by editing and publishing their own scholarly work.

Samuel A. Wofsy and Robert E. Wilson Awards. Each year the department awards two Wofsy Fellowships to outstanding graduate students at the M.A. and Ph.D. levels. The department also awards two Wilson Scholarships to outstanding junior and senior students.

UNDERGRADUATE PROGRAM

Bachelor of Arts — Spanish

Preparation for the major. Spanish 1, 2, 3, 4, 5, 6, 25, 30. Spanish majors must maintain an average grade of at least C in Spanish courses taken prior to the junior year. Students transferring from other institutions may be tested by examination. Students planning to pursue graduate work in Spanish with emphasis on linguistics and philology are advised to take at least two quarters of college Latin or the equivalent. Native speakers of Spanish will not be permitted to enroll in any Spanish courses lower than 25. Students who receive a grade lower than C in any of the sequence Spanish 1-3 are urged to repeat the course (for no credit if necessary) or provide themselves with a tutor before proceeding to the next course in the sequence.

All upper-division and graduate courses are given in Spanish. Spanish 25 and 30, or their equivalents, are prerequisite to all upper-division courses in which the language of instruction is Spanish. Spanish 100 or the equivalent is prerequisite to all Spanish linguistics courses.

Upper-division major. Forty upper-division units are required, of which four must be in Spanish 100, twelve in Spanish 110A-B-C-D, and eight in 111A-B-C, or their equivalents as approved by a departmental adviser or the department chair. Four of the remaining 16 units may be selected from Luso-Brazilian literature, Portuguese 128, Spanish 126, 127, and 174 (film courses), or comparative literature courses in peninsular or Latin American literature. A maximum of four units of Spanish 128 may be applied to the upper-division major. Spanish 119A-B and/or Spanish 177 are recommended. No course in translation may be applied to the major.

Senior Honors Program in Spanish

Qualified majors will be invited to participate in an honors program, designed to allow them to pursue independent research on a topic of particular interest to them. Requirements for admission to the program include 105 units of course credits; completion of a minimum of 30 upper-division units in the major; minimum overall grade-point average of 3.0; grade-point average of 3.5 or better in the major. Honors graduates will be identified each year at the head of the graduation list in Spanish and will be designated on university

records and diplomas with the legend Distinction in the Major.

Bachelor of Arts — Portuguese

Preparation for the major. Portuguese 1, 2, 3, 4, 5, 6, or equivalent. Portuguese 8A-B-C is strongly recommended. Students who wish to make Portuguese their major subject must have maintained at least an average grade of C in the college courses in Portuguese taken prior to their junior year. Transfer students may be tested by examination.

Upper-division major. Forty upper-division units are required, including 102A-B, 105A-B-C, and 106A-B-C. The remaining units must be divided among other courses in the 100 series (excluding Portuguese 195). Portuguese 114, 115, 120, and 125A-B may be accepted toward the unit requirement with the stipulation that readings for the major student be in the Portuguese language. Two courses from History 9A-B, 153, 154A-B, 155A-B, 157A-B-C, or Portuguese 125A-B are recommended.

Students may, by petition, substitute four upper-division units in Spanish literature, linguistics, and culture courses; film courses (Spanish 126, 127, 174, Portuguese 128); comparative literature courses in which Hispanic, Portuguese, or Brazilian literature is studied; or Portuguese and Brazilian history courses.

Senior Honors Program in Portuguese

Qualified majors will be invited to participate in an honors program, designed to allow them to pursue independent research on a topic of particular interest to them. Requirements for admission to the program include 105 units of course credits; completion of a minimum of 30 upper-division units in the major; minimum overall grade-point average of 3.0; grade-point average of 3.5 or better in the major. Honors graduates will be identified each year at the head of the graduation list in Portuguese and will be designated on university records and diplomas with the legend Distinction in the Major.

GRADUATE PROGRAM

Master of Arts — Spanish

Admission

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in Spanish or its equivalent. All applicants are required to take the Advanced Test in Spanish of the Graduate Record Examination. International applicants who have not received a bachelor's or master's degree from a U.S. institution, or who do not speak English as their native language, must also submit Test of English as a Foreign Language (TOEFL) scores to the Graduate Division. Candidates who are deficient in preparation will be required to take the necessary undergraduate courses to make up deficiencies before beginning work in the M.A. program. A list of undergraduate courses that are deemed to be suitable undergraduate preparation is available from the graduate committee. At the end of the first year of study candidates' work will be evaluated. Those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

Candidates for the M.A. in Spanish will follow one of the three programs described below. The M.A. degree is awarded according to Plan 2 (comprehensive examination) in Programs 1 and 2, and according to Plan 1 (thesis) in Program 3.

Program 1: Language and Culture. This program is designed primarily for students who wish to pursue advanced studies and who do not plan to go on to the Ph.D. It emphasizes an interdisciplinary approach. Each student will have an individual course program, designed in consultation with the program director, approved by the graduate committee, and determined in part by the nature of the student's study topic in Spanish 596. The nature of the program requires proficiency in written and oral standard Spanish.

A minimum of 12 courses is required, at least six of which must be in the graduate series. With prior approval, up to three upper-division or graduate courses from pertinent courses in Portuguese or in other departments may be included. The six graduate courses will include a sequence of two tutorials (Spanish 596) in which the student carries out a study project in Spanish. Results of the project take the form of a written paper and an oral presentation. In addition, each candidate will take a two-hour oral examination, given by a departmental committee, on the study project and on a reading list of essential works of Spanish and Spanish-American literature.

Program 2: Literature. This program is designed primarily for students who plan to pursue a Ph.D. in the field of Spanish and Spanish-American literature. The student must complete a minimum of eleven graduate and upper-division courses, at least eight of which must be in the graduate series. Spanish 121A-B or 122A-B are required if they have not been taken previously for the B.A. Spanish 212A and at least one two-quarter research seminar in literature (294A-B or 295A-B) are required. Up to two upper-division or graduate courses in Luso-Brazilian literature may count toward the degree. A reading knowledge of a pertinent language other than Spanish is required. Portuguese is acceptable.

The student will prepare an academic program in consultation with the program director, who will provide guidance until the student is prepared to take the comprehensive examinations. The comprehensive examinations consist of six hours of written work based on a departmental reading list and an oral examination of approximately one hour. In order to be accepted to the doctoral program, the student must pass the comprehensive examinations and receive the approval of the graduate committee.

Program 3: Linguistics or Studies in Bilingualism. This program is designed primarily for students who plan to go on to a Ph.D. with emphasis in either Hispanic linguistics or Spanish-English bilingualism. The focus on Hispanic linguistics provides the student with knowledge and research skills in synchronic and diachronic linguistics. Contrastive, sociolinguistic, geographical, and historical approaches are followed in the Spanish-English bilingualism emphasis. Completion of Spanish 100 (or equivalent) is a prerequisite for entrance into Program 3. In addition, Spanish 107 and 109 are prerequisites for the Spanish-English bilingualism emphasis.

Each student will have an individual course program, designed in consultation with the program director and approved by the graduate committee. Candidates are expected to complete a minimum of ten graduate and upper-division courses, at least six of which must be in the graduate series, including at least one two-quarter research seminar in Hispanic linguistics (296A-B). At least six of the ten courses must be taken within the department, including no fewer than two upper-division or graduate courses in one area of Hispanic literature.

The candidate, in consultation with a faculty adviser, will pursue an individual study of a specific topic and will present the results in the form of a short thesis. A reading knowledge of a pertinent

foreign language other than Spanish (Portuguese is acceptable), or competence in the use of special research methods such as computers or statistics, is required.

Master of Arts — Spanish and Portuguese

Admission

In addition to the general requirements for admission to graduate status, students wishing to combine graduate work in Hispanic and Luso-Brazilian literatures should have an undergraduate major in either Spanish or Portuguese, or the equivalent. All applicants with a Spanish major or the equivalent are required to take the Advanced Test in Spanish of the Graduate Record Examination. International applicants who have not received a bachelor's or master's degree from a U.S. institution, or who do not speak English as their native language, must also submit Test of English as a Foreign Language (TOEFL) scores to the Graduate Division. Candidates who are deficient in preparation will take the necessary undergraduate work to make up deficiencies before beginning work in the M.A. program. At the end of the first year of study, students' work will be evaluated and those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

The M.A. degree in Spanish and Portuguese is awarded according to Plan 2 (comprehensive examination). The program is designed primarily for students who wish to acquire a broad background in Hispanic and Luso-Brazilian studies, including those who contemplate subsequent work toward the Ph.D.

Spanish 25 and Portuguese 4, 5, 6 (or 20) are requisites for completion of the program. A minimum of 12 courses is required, at least eight of which must be in the graduate series, including Spanish 212A, and one two-quarter research seminar. Spanish 121A-B (if not taken previously for the B.A.), and a reading knowledge of a pertinent foreign language other than Spanish and Portuguese, are required.

Each student will have an individual course program designed in consultation with the program director and approved by the graduate committee. Its structure will be determined in large part by the student's interests and goals. However, all students are expected to acquire knowledge of the principal works of Hispanic, Portuguese, and Brazilian literatures. The comprehensive examination is based in part on a departmental reading list of important texts; it consists of two written tests, each followed by a one-hour oral examination.

Master of Arts — Portuguese

Admission

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in Portuguese or its equivalent. International students must submit Test of English as a Foreign Language (TOEFL) scores to the Graduate Division. Students admitted to the program who are deficient in preparation will be required to take the necessary undergraduate work to make up deficiencies before beginning work in the M.A. program. At the end of the first year of study, students' work will be evaluated and those who are not making satisfactory progress toward the degree may be advised to drop out of the program.

Degree Requirements

The M.A. degree in Portuguese is awarded according to Plan 2 (comprehensive examination). The program is designed for students who plan to

earn a Ph.D. in the field of Portuguese and Brazilian language and literature, and it is normally completed within two years.

The student must complete a minimum of eleven graduate and upper-division courses, at least eight of which must be in the graduate series. Spanish 121A-B, Spanish 212A, and at least one two-quarter graduate research seminar in Portuguese or Brazilian literature (294A-B or 295A-B) are required. Up to two upper-division or graduate courses in Spanish or Spanish-American literature may count toward the degree. A reading knowledge of a pertinent language other than Portuguese is required; Spanish is acceptable.

Each student will have an individual course program designed in consultation with the program director, who will provide guidance until the student is prepared to take the comprehensive examinations. The comprehensive examinations consist of six hours of written examinations based on a departmental reading list and an oral examination of approximately one hour.

In order to be accepted to the doctoral program, the student must pass the comprehensive examinations with honors and receive the approval of the graduate committee.

Doctor of Philosophy — Hispanic Languages and Literatures

The Department of Spanish and Portuguese offers the Ph.D. degree in Hispanic languages and literatures in three areas: Spanish and Spanish-American literature, Luso-Brazilian literature, and Hispanic linguistics.

Admission

Applicants will normally have followed a course of study leading to the M.A. degree in Spanish under Programs 2 or 3, the M.A. in Portuguese, or the M.A. in Spanish and Portuguese (see above). Applicants who possess the M.A. in Spanish, or the equivalent training, are required to take the Advanced Test in Spanish of the Graduate Record Examination. International applicants must submit TOEFL scores; 550 is the minimum acceptable score for admission into the graduate program.

During the first quarter of residence, the graduate committee, if it has not already done so, will specify, in the case of students who took the M.A. or equivalent on another campus, exactly which areas from our own M.A. program the student has not covered adequately. These deficiencies must be made up by taking courses specified by the graduate committee.

Within the first three quarters of residence, the student will present to the graduate committee a proposal for a program of studies which may lead to a subsequent proposal for a Ph.D. dissertation. This preliminary proposal will outline courses, readings, and methods of research aimed at a broad historical period in the field, a restricted genre, or an author or authors. Students in linguistics will outline a topic with a synchronic or diachronic approach, specific level of analysis, a corpus pertinent to the intended object of research, and a suitable method of research. Specific courses and topics set forth in the proposal will be in addition to the required courses cited below, although some overlapping is possible. A more detailed guide to this first step is available from the graduate secretary of the department.

Within two weeks after submission of the proposal, every doctoral candidate will take an oral preliminary examination presided over by the graduate committee, in which the student will make a brief commentary on a text, followed by a period of questions, to permit an evaluation of the student's potential. The preliminary examination

may be repeated once upon the recommendation of the graduate committee. The doctoral committee will be formed after the oral preliminary examination, according to the procedures detailed in the above-mentioned guide to the Ph.D. program.

Degree Requirements

In addition to courses specified in the program proposal, all students will complete two two-quarter research seminars. Ph.D. students in literature will take Spanish 212A, at least one quarter of either Spanish 213 or 214, Spanish 221, and three graduate courses in Luso-Brazilian literature which may include courses in the Portuguese 205 and 206 series. If the emphasis is Luso-Brazilian literature, the student will take three graduate courses in Spanish or Spanish-American literature. Ph.D. students in linguistics will complete Spanish 212B; Spanish 221; four graduate courses in linguistics (two of them reflecting a different level, approach, and methodology from those courses included in the program proposal); and one graduate course in literature approved by the student's doctoral committee.

Before being admitted to candidacy, the student must demonstrate a good reading knowledge of at least one foreign language besides Spanish and Portuguese, subject to approval by the graduate committee as germane to the student's program proposal. Students in linguistics may substitute for the third language an appropriate degree of computer literacy or of competence in statistics. A general command of Spanish or Portuguese will be assumed but not formally tested.

When the requirements are completed and work in the program of studies is sufficiently advanced, the student will submit to the doctoral committee a detailed written proposal for a Ph.D. dissertation. Within two weeks, the student will defend the proposal before the doctoral committee in an oral qualifying examination.

Students are advanced to candidacy when they have passed the qualifying examination and will thereupon begin work on the dissertation under the supervision of the chair of the doctoral committee. When all members of the committee have approved the final version of the dissertation, the degree will be awarded.

PORTUGUESE COURSES

LOWER DIVISION

1. Elementary Portuguese

(4) Staff
Beginning course in Portuguese establishing fundamental auditory and oral skills, with secondary practice in reading and writing, pronunciation, intensive oral practice. Includes laboratory work.

2. Elementary Portuguese

(4) Staff
Prerequisite: Portuguese 1.
Continues activities commenced with Portuguese 1.

3. Elementary Portuguese

(4) Staff
Prerequisite: Portuguese 2 or equivalent.
Completes the basic study of the elements of the language.

4. Intermediate Portuguese

(4) Staff
Prerequisite: Portuguese 3 or equivalent.
Begins review of basic grammar and syntax. (F)

5. Intermediate Portuguese

(4) Staff

Prerequisite: Portuguese 4 or equivalent.

Continues review of basic grammar and syntax. (W)

6. Intermediate Portuguese

(4) Staff

Prerequisite: Portuguese 5 or equivalent.

An intensive course designed to develop students' skills in reading and oral and written expression by reading and discussing Luso-Brazilian texts and writing compositions on related topics. (S)

8A-B-C. Portuguese Conversation

(2-2-2) Staff

Prerequisite: Portuguese 3 or equivalent or consent of instructor.

Portuguese conversation; courses conducted entirely in Portuguese.

10. Beginning Intensive Portuguese

(12) Staff

Designed for high school students and university undergraduates who desire to accelerate and complete a year of language work in a summer session and for graduate students wishing to fulfill the graduate language requirement with Portuguese as one of the languages in which they are competent to read works in their major field. Prepares students to continue with second year Portuguese successfully. (SS)

11. Portuguese for Graduate Students

(5) Staff

Designed primarily for graduate students who already possess a knowledge of another romance language and who wish to acquire a reading knowledge of Portuguese.

12. Portuguese Bilingual Education

(2) Staff

Current philosophies, problems, approaches, materials, and instructional aids used in Portuguese-English bilingual-bicultural elementary and secondary programs in a number of California school districts. (SS)

20. Intermediate Intensive Portuguese

(12) Staff

Designed for high school students and university undergraduates and graduates who desire to accelerate and complete a year of language work in a summer session. An intensive course designed to review basic grammar and syntax, develop oral and written expression. (SS)

UPPER DIVISION***Portuguese 6 or equivalent is prerequisite to all upper-division courses taught in Portuguese except Portuguese 195.****Literature courses taught in English translation or courses taught in English will generally not count towards fulfilling Portuguese major requirements. See "Upper-division major" section for exceptions.***102A-B. Advanced Grammar and Composition**

(4-4) Staff

Study of the finer points of Portuguese grammar and syntax. Equal stress is placed on written and oral practice of the language. The work in class will consist of careful study of essays and articles.

105A-B-C. Survey of Portuguese Literature

(4-4-4) Belchior, Sharrer

A: Portuguese literature from its origins to the sixteenth century.

B: Portuguese literature of the sixteenth, seventeenth, and eighteenth centuries.

C: Portuguese literature of the nineteenth and twentieth centuries.

106A-B-C. Survey of Brazilian Literature

(4-4-4) Williams, Belchior

A: Brazilian literature of the colonial period.

B: Brazilian literature from the nineteenth century to 1922.

C: Brazilian literature from 1922 to present.

114. Literature of the Portuguese Expansion

(4) Williams

Literary masterpieces of the Portuguese Golden Age (fifteenth and sixteenth centuries, and part of seventeenth century): chronicles of the discoveries, the epic poem *Os Lusíadas* by Camões, dramatic narratives of shipwrecks — all translated into English.**115. Brazilian Literature in English Translation**

(4) Williams

Prerequisite: upper-division standing or consent of instructor.

Significant writers and poets of nineteenth- and twentieth-century Brazil: Gonçalves Dias, Castro Alves, Sousândrade, Machado de Assis, Mário de Andrade, Oswald de Andrade, Cecília Meireles, Guimarães Rosa, Suassuna, and others. Taught in English.

120. Portuguese Literature in English Translation

(4) Williams

A presentation of major works in Portuguese to reveal the interest and the originality of Portuguese literature through the ages.

125A-B. Culture and Civilization of Portugal and Brazil*Prerequisite: upper-division standing or consent of instructor.*

(4-4) Williams

The distinctive features of Portugal and Brazil as manifested in their institutions, art, music, and literature. Taught in English.

A: Portugal.

B: Brazil.

128. Luso-Brazilian Cinema

(4) Fuentes, Williams

Prerequisite: upper-division standing or consent of instructor.

Portuguese and Brazilian films of the past forty years both as an art medium and as a document of changing society. Special attention paid to the works of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be discussed. Taught in English.

132A-B. Luis de Camões

(4-4) Belchior

A study of Camões' lyric poetry and epic poem, *Os Lusíadas*.**150AA-ZZ. Advanced Studies in Portuguese**

(12) Williams, Belchior, Raposo

*Prerequisite: Portuguese 6 or equivalent.**Course may be repeated.*

A comprehensive three-track, three hour per day, course that correlates advanced grammar and composition with literary masterpieces of the Portuguese language and culture of the Luso-Brazilian world, all epochs. (SS)

170. African Literature in Portuguese

(4) Staff

Prerequisites: Portuguese 6 or equivalent; see instructor.

Modern authors from Cabo Verde, Angola, and Mozambique.

180. African Literature in Portuguese in English Translation

(4) Staff

African writers from the ex-Portuguese colonies, presented in English translation, for the benefit of students in African Studies or related areas, who do not know Portuguese.

183AA-ZZ. Studies in Portuguese Literatures

(4) Staff

Prerequisite: consent of instructor. May be repeated to a maximum of 20 units provided the letter designation is different.

Topic or author chosen by faculty member; each course on a different topic.

184AA-ZZ. Studies in Portuguese Linguistics

(4) Raposo

*Course may be repeated for a maximum of 20 units, provided letter designation is different.**Students limited to one topic per quarter.*

Topic to be chosen by faculty member.

185. Brazilian Novel of the Twentieth Century

(4) Williams

Prerequisites: Portuguese 4, 5, 6, or consent of instructor.

A study of the Brazilian novel from Machado de Assis to the present, including authors such as Lima Barreto, Érico Veríssimo, Guimarães Rosa, Lins do Rego, Graciliano Ramos, Mário Andrade, Oswald de Andrade, Jorge Amado, Clarice Lispector.

189. Brazilian Modernism

(4) Williams

An introduction to the poetry and prose fiction of the Brazilian avant-garde of the 1920s and 1930s.

195. Senior Honors Independent Research

(4) Staff

Prerequisite: admission to the Portuguese senior honors program.

The student will engage in research leading to a paper of considerable depth and complexity on a topic dealing with the literature and/or language of Portugal, Brazil, or Portuguese-speaking Africa.

199. Independent Studies in Portuguese

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Portuguese. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined.

Independent studies with one of the departmental instructors in Portuguese, to permit study of subject desired by student not covered in course offerings.

GRADUATE COURSES***NOTE: The content of "studies" courses may vary from quarter to quarter and may be repeated for credit with the consent of the department graduate adviser.***

205A-B-C. Survey of Portuguese Literature for Spanish Graduate Students
(4-4-4) Staff

Prerequisites: Portuguese 105A-B-C or concurrent attendance.
A: From origins to sixteenth century.
B: Sixteenth, seventeenth, and eighteenth centuries.
C: Nineteenth and twentieth centuries.
Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examinations.

206A-B-C. Survey of Brazilian Literature for Spanish Graduate Students
(4-4-4) Staff

Prerequisites: Portuguese 106A-B-C or concurrent attendance.
A: Colonial period.
B: From nineteenth century to 1922.
C: From 1922 to present.
Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examinations.

221A-B. History of Portuguese and Spanish Languages
(4-4) Staff

Prerequisites: Spanish 121A-B or concurrent attendance.
A: Selected topics in historical phonology in light of recent scholarship.
B: Selected topics in historical morphology and syntax in light of recent scholarship.
Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. or Ph.D. examinations.

222. Studies in Galician-Portuguese Medieval Literature
(4) Sharrer

Selected topics in light of recent scholarship.

232A-B. Studies on Camões

(4-4) Belchior, Williams
Selected topics in light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. or Ph.D. examinations.

240. Studies in Portuguese Mannerist and Baroque Literature

(4) Belchior
Portuguese poetry and prose of the sixteenth and seventeenth centuries.

245. Studies in Brazilian Colonial Literature

(4) Belchior, Martínez-López, Williams
Selected authors and topics in Brazilian literature of the sixteenth, seventeenth, and eighteenth centuries.

250. Studies on Eca de Queiróz and the Portuguese Realistic Novel

(4) Belchior
Eca de Queiróz's work, his conception of realism, his influence on Spanish, Spanish-American and Brazilian literature, his most important followers.

255. Studies on Machado de Assis and the Brazilian Novel

(4) Belchior, Williams
Machado de Assis' novelistic work; its innovative approach as a basis of modern fiction. Other novelists of his time will also be studied.

260. Studies in Brazilian Post-Independence Literature

(4) Belchior, Williams
Selected authors and literary movements of the nineteenth and twentieth centuries.

265. Studies on Fernando Pessoa and the Avant-Garde

(4) Belchior
Pessoa's poetry, its influence on contemporary Portuguese poetry, and its relationship to the world avant-garde movement.

283. Individual Luso-Brazilian Authors and Special Topics

(4) Staff
Course may be repeated for a total of 24 units (six courses, each a different author).
Intensive study on the work of an individual Luso-Brazilian author, to be chosen by the instructor.

294A-B. Research Seminar in Brazilian Literature

(4-4) Belchior, Williams
In-progress grade (IP) for first quarter; grading for both quarters at the end of second quarter.
A: Primarily intended to train students in research techniques, background material, and selection of topic.
B: Completion of research paper, reporting regularly to class on progress of work.

295A-B. Research Seminar in Portuguese Literature

(4-4) Belchior, Williams
In-progress grade (IP) for first quarter, grading for both quarters at the end of the second quarter.
A: Primarily intended to train students in research techniques, background material, and selection of topics.
B: Completion of research paper, reporting regularly to class on progress of work.

590. Teaching Assistant and Associate Training Course

(2) Staff
Prerequisites: graduate standing and appointment as a teaching assistant or student associate in Portuguese. Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all first-year teaching assistants and student associates in Portuguese.
Instruction in methodology for teaching lower-division Portuguese courses at UCSB.

591. Teaching Assistant Practicum

(4) Staff
Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all teaching assistants in Portuguese.
Supervised teaching of lower-division Portuguese courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

592. Teaching Associate Practicum

(4) Staff
Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all student associates in Portuguese.
Supervised teaching of lower-division Portuguese courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

593. Research Assistant Practicum

(2-4) Staff
Units earned do not apply toward completion of advanced degree. S/U grading only.
Supervised research in Luso-Brazilian literature, linguistics, or culture.

594. Special Topics

(1-4) Staff
A special seminar on research subjects of current interest.

595AA-ZZ. Directed Teaching of Literature/Linguistics

(4) Staff
Prerequisites: doctoral candidate with teaching assistant or associate instructor status.
Individual tutorial. Application of research and theory to classroom practice in teaching of undergraduate literature or linguistics courses. The instructor of the literature or linguistics courses will supervise the student as collaborator in the planning and teaching of it.

596. Directed Reading and Research

(2-4) Staff
Prerequisite: consent of program adviser.
Individual tutorial. A written proposal for each tutorial must be approved by student's program adviser and by the department chair. The number of units which a student may take in this series depends on the nature of the program and the consent of the adviser or the departmental graduate committee.

597AA-ZZ. Individual Study for Master's Comprehensive or Ph.D. Examinations

(2-12) Staff
S/U grading. No unit credit allowed toward advanced degrees.
Individual study under instructor who is a member of the student's program committee.

599AA-ZZ. Ph.D. Dissertation Research and Preparation

(2-12) Staff
S/U grading only.
Research and writing of the dissertation. Instructor should be the chair of the student's doctoral committee.

PORTUGUESE COURSES TAUGHT IN ENGLISH

The following courses require no knowledge of a foreign language. See course descriptions above.

114. Literature of the Portuguese Expansion

(4)

115. Brazilian Literature in English Translation

(4)

120. Portuguese Literature in English Translation

(4)

125A-B. Culture and Civilization of Portugal and Brazil

(4-4)

128. Luso-Brazilian Cinema

(4)

180. African Literature in Portuguese in English Translation

(4)

SPANISH COURSES

LOWER DIVISION

It is highly recommended that students who have studied Spanish previously take the placement

examination administered by the department to determine proper placement in the department's language program. Students will be placed in the Spanish 1-5 sequence depending upon examination scores. Students who complete the CEEB Achievement Test in Spanish with a score of 4 or 5 will be required to enroll in Spanish 25. Any two courses in the series Spanish 1 through 6 must be taken in sequence and not simultaneously.

1. Elementary Spanish

(4) Staff

Beginning Spanish establishing fundamental auditory and oral skills, with secondary practice in reading and writing; pronunciation, intensive oral practice in short natural dialogs and drills; present tense (regular, stem-changing, and irregular verbs); "ser" and "estar"; object pronouns. Includes laboratory work.

1SS. Intensive Elementary Spanish

(4) Staff

Beginning course in Spanish establishing auditory and oral skills, with secondary practice in reading and writing Spanish. Pronunciation, intensive oral practice, dialogs, drills. (SS)

2. Elementary Spanish

(4) Staff

Prerequisite: Spanish 1 or equivalent.

Continues activities commenced with Spanish 1.

2SS. Intensive Elementary Spanish

(4) Staff

Prerequisite: Spanish 1SS.

Continues activities of Spanish 1SS with increased communication and reading skills. Major grammatical structures studied include commands, complex sentences, subjunctive versus indicative, present and imperfect subjunctive, preterite and imperfect, reflexive. Introduction to reading skills. (SS)

3. Elementary Spanish

(4) Staff

Prerequisite: Spanish 2 or equivalent.

Completes the basic study of the elements of the language.

4. Intermediate Spanish

(4) Staff

Prerequisite: grade of C or better in Spanish 3 or equivalent.

Begins review of basic grammar and syntax.

4SS. Intensive Intermediate Spanish

(4) Staff

Prerequisite: Spanish 3 or equivalent.

Begins review of basic grammar and syntax, designed to develop the four fundamental skills: understanding, speaking, reading, writing. Course conducted in Spanish with emphasis on vocabulary building and use of Spanish in practical situations. Refinement of reading skills. (SS)

5. Intermediate Spanish

(4) Staff

Prerequisite: grade of C or better in Spanish 4 or equivalent.

Continues the review of basic grammar and syntax. Course conducted in Spanish.

5SS. Intensive Intermediate Spanish

(4) Staff

Prerequisite: Spanish 4, 4SS, or equivalent.

Continues the review of basic grammar and syntax begun in Spanish 4, developing the fundamental skills. More vocabulary and practical situations. A play and other supplementary materials are read for discussion and for increasing vocabulary. (SS)

6. Intermediate Spanish

(4) Staff

Prerequisite: grade of C or better in Spanish 5 or equivalent.

An intensive course designed to develop students' skills in reading, oral, and written expression by reading and discussing Hispanic texts and writing compositions on related topics.

8A-B-C. Spanish Conversation

(2-2-2) Staff

Prerequisites: Spanish 3 or equivalent for

Spanish 8A: Spanish 4 or equivalent for Spanish 8B; Spanish 5 or equivalent for Spanish 8C.

Conversational practice through which students learn idioms, conversational courtesies of the language, etc., and improve facility in speaking and understanding the spoken language.

9A-B-C-D. Spanish Conversation: Professional Subjects

(2-2-2-2) Staff

Prerequisites: Spanish 6 or equivalent. P/NP grading only.

Directed conversation concentrating on these professional areas:

A: Foreign service.

B: Health work.

C: Legal and social work.

D: Commerce.

25. Advanced Spanish

(4) Staff

Prerequisites: grade of C or better in Spanish 6 or equivalent; Spanish 6 may be taken concurrently with Spanish 25. If Spanish 6 is taken concurrently, grade of C or better in Spanish 5 required.

An intensive course taught in Spanish designed to reinforce students' comprehension and ability to express themselves in Spanish, both orally and in writing, and to develop the students' vocabulary and awareness of syntactical structures in the language.

30. Introduction to Hispanic Literature

(4) Staff

Prerequisite: Spanish 25 or equivalent (may be taken concurrently). A required course for all Spanish majors to be taken prior to any upper-division courses in literature.

Hispanic literature in relation to literary problems in general. Such topics as: the functions of literature, literary periods, movements and trends. The analysis and interpretation of texts.

40. Spanish for Spanish Speakers

(4) Ascarrunz-Gilman

Prerequisite: strong speaking ability in Spanish, to be confirmed by personal interview.

This course is designed to address, on the university level, the needs and strengths of students with Spanish speaking background who have not received formal language training in Spanish speaking countries. Emphasis will be placed on skills such as composition, advanced reading comprehension, standard vs. vernacular usages, cross-language interference, etc.

UPPER DIVISION

Literature courses taught in English translation or courses taught in English will generally not count towards fulfilling Spanish major requirements. See "Upper-division major" section for exceptions.

100. Introduction to Hispanic Linguistics

(4) Gallo, Perissinotto, Raposo

Prerequisites: Spanish 25, 30, or equivalent, with a grade of C or better. Prerequisite to all other upper-division courses in Hispanic linguistics.

Introduction to linguistic theories, methods, and problems as applied to Spanish. Taught in Spanish with Spanish examples. (F,S)

101. American Spanish

(4) Gallo, Perissinotto

Prerequisite: Spanish 25, 30, or equivalent.

Geographical, social, and stylistic distribution of phonemic, morphosyntactic, and lexical features in Spanish as spoken in Latin America.

102A-B. Advanced Grammar and Composition

(4-4) Lopez, Perissinotto

Prerequisite: Spanish 25, 30, or equivalent.

Required for teaching credential candidates with major in Spanish.

The study of the finer points of Spanish grammar and syntax. Equal stress is placed on written and oral practice of the language.

102C. Advanced Spanish for Communication: An Intensive Approach

(4) Staff

Prerequisite: Spanish 25 or consent of instructor.

For the advanced student or teacher of Spanish. Special attention to problems of language interference for bilingual persons; translation exercises, vocabulary expansion, idiomatic constructions.

103. Spanish Pronunciation

(4) Perissinotto

Prerequisite: Spanish 100. Required for teaching credential candidates.

Intensive patterned pronunciation drills and exercises in sound discrimination aimed at familiarizing the student with the mechanics of speech production. (F,S)

104. Standard Spanish

(4) Gallo

Prerequisite: Spanish 100.

Criteria for establishing correct usage in contemporary written and spoken Spanish; coexistence of different "correct" norms; problems of coherence in the choice of a model. Formal and informal standardization; leveling of regional differences through the influence of the mass media or the Spanish Academy.

105. Advanced Translation

(4) Lopez

Prerequisite: Spanish 25, 30, or equivalent

Oral and written translations to and from target language, allowing students to translate and interpret texts from different fields with accuracy as regards to grammar, syntax, vocabulary, and style. Theoretical points will be explained within contexts studied.

106. Cultures in Contact

(4) Gallo, Perissinotto

Prerequisite: Spanish 25, 30, or equivalent.

Patterns of cultural contacts in the U.S. between Anglos and Spanish-speaking communities (Cubans, Mexican-Americans, and Puerto Ricans). Description of different acculturation situations with special reference to such problems as cultural identity and language loyalty and their relationship to social competence and integration. This course is intended to complement, from a cultural point of view, the objectives of Spanish 107.



Danscape'86, one of the annual fall concerts that showcases student dancers and faculty and student choreographers, included this tableau from "Goat Song," created by noted New York choreographer and guest artist-in-residence Kathryn Posin.

107. Languages in Contact

(4) Perissinotto

Prerequisite: Spanish 25, 30, or equivalent.

The social and historical contexts of the contact between Spanish and Latin, Italian, French, Aztec, Quechua, English, Portuguese, etc. Causes and mechanisms that result in interference and borrowing on the phonic, grammatical, and lexical levels.

108A-B-C. Spanish-English Contrastive Analysis

(4-4-4) Gallo, Raposo

Prerequisite: Spanish 25, 30, or equivalent.

Points of similarity and contrast in the phonic, grammatical, and lexical systems of Spanish and English. Critical review of applications of contrastive analysis in such areas as the study of bilingualism, and the teaching of Spanish and English as a second language.

109. The Spanish Language in the United States

(4) Perissinotto

Prerequisite: Spanish 25, 30, or equivalent.

Synchronic and diachronic description of the Spanish spoken by Hispanos — especially Chicanos, Cubans, and Puerto Ricans in the U.S. Discussions complemented by tapes, slides, and movies.

110A-B-C-D. Spanish Literature from the Beginnings to the Present

(4-4-4-4) Staff

Prerequisite: Spanish 25, 30, or equivalent.

A: Medieval Spanish literature.

B: Golden Age literature.

C: Eighteenth- and nineteenth-century Spanish literature.

D: Twentieth-century Spanish literature.

111A-B-C. Spanish-American Literature from the Beginning to the Present

(4-4-4) Staff

Prerequisite: Spanish 25, 30, or equivalent.

A: Colonial Spanish-American literature.

B: Nineteenth-century Spanish-American literature.

C: Twentieth-century Spanish-American literature.

112. Applied Spanish Linguistics for Teachers

(4) Staff

Prerequisite: Spanish 25 or equivalent. Intended especially for teachers or prospective teachers. Fundamentals of Spanish phonology, morphology, and syntax, with emphasis on areas that present special difficulty for English speakers. Linguistic principles applied to the analysis and correction of learner errors, and to the evaluation, production, and classroom use of teaching materials.

114A-B-C. The Spanish Language: A Linguistic Approach

(4-4-4) Gallo, Perissinotto, Raposo

Prerequisite: Spanish 100.

Study of the systematic aspects of language structure which make communication possible. Each quarter deals with a different aspect of the Spanish system, as follows:

A: Phonetics and phonemics.

B: Morphology and syntax.

C: Semantics.

115A-B. Masterpieces of Spanish Literature (in English Translation)

(4-4) Bary

Prerequisite: upper-division standing or consent of instructor. Not for Spanish majors.

Readings in English translation and discussion of representative works from the Middle Ages to the end of the sixteenth century, and from the seventeenth century to the end of the twentieth.

116. Juan Ruiz: The Book of Good Love (in English Translation)

(4) Sharrer

Prerequisite: consent of instructor or upper-division standing. Not for Spanish majors.

Reading and interpretation of the fourteenth-century Spanish masterpiece in English translation. A study of *The Book of Good Love* in the context of other great works of the period, such as the *Decameron* and the *Canterbury Tales*.

117. Spanish and Spanish-American Essay

(4) Staff

Prerequisite: Spanish 30 or equivalent.

Representative essayists of Spain, from Saavedra Fajardo to Ortega y Gasset, and of Spanish America, from Sarmiento and Montalvo to Alfonso Reyes and Octavio Paz.

118A-B. Spain's Culture and Civilization (in English Translation)

(4-4) Barron, Staff

Prerequisite: upper-division standing or consent of instructor. Intended for nonmajors.

The culture and civilization of Spain from its beginnings to the present. Whenever possible, slides, music, and other audio-visual aids will be used.

119A-B. Spanish Institutions and Culture

(4-4) Barron

Prerequisite: Spanish 25 or equivalent.

Study of the development of the Spanish nation, with special focus on key social and political institutions, the arts, and major currents of thought.

120A-B. Contemporary Spanish-American Fiction in English Translation

(4-4) Bary, Jaimes-Freyre

A: Reading and discussion of novels and short stories by Borges, Carpentier, Cortázar, García Márquez, Vargas Llosa, and others.

B: Reading and discussion of representative works of contemporary Mexican authors, including Yáñez, Rulfo, Fuentes, and others.

121A-B. History of Spanish and Portuguese Languages

(4-4) Perissinotto, Sharrer, Gallo, Raposo

Prerequisite: Spanish 25, 30, or equivalent.

Major steps in the development of both languages from their origins to modern times.

A: Focus on Spanish phonology, with major parallel developments in Portuguese.

B: Morphology and syntax.

Sample texts and exercises in either Spanish or Portuguese, according to each student's primary interest.

122A-B. Medieval Spanish Literature

(4-4) Martínez-López, Sharrer, Avallé-Arce

Prerequisite: Spanish 25, 30, or equivalent.

A detailed survey of the main trends in Spanish literature to 1500.

123A-B. Hispanic Balladry

(4-4) Martínez-López, Sharrer

A: History of the Spanish ballad; Hispanic balladry in Spanish America, the United States, and among the Sephardic Jews.

B: Origin and originality of the Mexican ballads (corridos); their history, themes, and style.

126. Spanish Cinema

(4) Barron, Fuentes

Study in English of Spanish films of the past forty years both as an art medium and as a document of a changing society. Special attention paid to the work of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be studied.

127. Latin American Cinema

(4) Fuentes

Study in English of Latin American films of the past forty years both as an art medium and as a document of a changing society. Special attention paid to the work of the new generation of directors. When applicable, the relationship between a literary work and its film adaptation will be studied.

128. Creative Writing

(4) Albarracin

Prerequisite: Spanish 25, 30, or equivalent.

An adequate level of language proficiency is needed. P/NP grading.

Writing in such forms as short story and poem. Designed primarily for students who are inclined to write fictional prose and/or poetry in Spanish.

131. Spanish Renaissance Poetry

(4) Martínez-López, Checa, Avalor-Arce

Prerequisite: Spanish 25, 30, or equivalent.

Lyric poetry of the sixteenth and seventeenth centuries: Garcilaso, Luis de León, San Juan de la Cruz, and others.

132. Spanish Baroque Poetry

(4) Martínez-López, Avalor-Arce

Prerequisite: Spanish 25, 30, or equivalent.

Spanish lyric poetry of the sixteenth century. Major trends and authors. Close readings of Lope de Vega, Góngora, Quevedo, and other poets.

134. Golden Age Novel

(4) Checa, Avalor-Arce

Prerequisite: Spanish 25, 30, or equivalent.

The main novelistic types of the period: novel of chivalry; pastoral novel; picaresque novel, and others (*Don Quixote* excluded).

136. Modern Mexican Literature

(4) Lomeli

Prerequisite: Spanish 25, 30, or equivalent.

Study of texts explaining the development of Mexican culture and literature. Topic and writers: modernism (from Gutiérrez Nájera to Tablada); the novel on the Mexican Revolution (Azuela); and the modern essay (Alfonso Reyes and Octavio Paz).

137A-B. Golden Age Drama

(4-4) Martínez-López, Checa

Prerequisite: Spanish 25, 30, or equivalent.

The classic *comedia*, by Lope, Tirso, Alarcón, Calderón, and other dramatists.

138. Contemporary Mexican Literature

(4) Lomeli

Prerequisite: Spanish 25, 30, or equivalent.

Continued study of major trends in Mexican literature as evidenced in selected works of the following authors: the poetry of Lope de Velarde and Octavio Paz; the *Contemporaneos* (Torres Bodet, Villaurrutia, Pellicer); and contemporary fiction (Yáñez, Rulfo, Arreola, and Fuentes).

140A-B. Cervantes: Don Quixote

(4-4) Martínez-López, Avalor-Arce

Prerequisite: Spanish 25, 30, or equivalent.

Reading and discussion of the first and second parts of *Don Quixote*.

141. Cervantes: Other Works

(4) Avalor-Arce

Prerequisite: Spanish 25, 30, or equivalent.

Readings from the minor works of Cervantes: *Novelas ejemplares*, *Comedias*, *Entremeses*.

142. Don Quixote in English Translation

(4) Bary, Avalor-Arce

Reading and discussion, both in English, of Cervantes' novel in the context of Hispanic culture and of world literature.

150. Eighteenth-Century Spanish Culture

(4) Barrón, Bary

Prerequisite: Spanish 25 or equivalent.

Literature, social history, artistic, and intellectual developments, all essential for a full understanding of subsequent events in both Spain and Spanish America.

151. Catalan for Advanced Students

(4) Sharrer

Prerequisite: Spanish 25, 30, or equivalent.

Catalan for advanced students. An intensive course for students with no previous study of Catalan.

152. Readings in Catalan

(4) Sharrer

Prerequisite: Spanish 151 or equivalent or consent of instructor. Course may be repeated once for credit when readings change.

Readings in Catalan. Selected readings in Catalan prose and poetry.

161. Spanish Romanticism

(4) Barrón

Prerequisite: Spanish 25, 30, or equivalent.

Main trends of Spanish romanticism—representative poets, dramatists, and prose writers.

165. Realism and Naturalism in Nineteenth-Century Spain

(4) Barrón

Prerequisite: Spanish 25, 30, or equivalent.

A reading of the main novelists dealing with realism and naturalism in nineteenth-century Spain.

170. The Generations of 1898 and 1927

(4) Bary, Fuentes

Prerequisite: Spanish 30 or equivalent.

Readings of such authors as Unamuno, Baroja, Azorín, Valle-Inclán, Antonio Machado, Ortega, Gómez de la Serna, Guillén, García Lorca, and others, analyzed in their historical and social context.

171. Hispanic Surrealism

(4) Bary

Surrealism in Spanish and Spanish American literature, emphasis 1925–1950; Larrea, Hinojosa, Alberti, Lorca, Aleixandre, Cernuda, Neruda, Paz. *New Hispanic Narrative*, from M. A. Asturias to present. Films of Buñuel, Dalí. Painting: Dalí, Picasso, Miró, etc. In English.

174. The Hispanic Novel and Cinema

(4) Fuentes

Prerequisite: Spanish 25 or equivalent.

Study of three or four Hispanic novels vis-à-vis their movie versions, permitting analysis of narrative in both genres, using existing films and videos based on masterpieces of Hispanic literature. Taught in Spanish.

175. Contemporary Spanish Literature

(4) Bary, Fuentes

Prerequisite: Spanish 30 or equivalent.

Spanish literature since the Civil War. A study of the main trends of postwar Spanish novel, theater, and poetry, in their historical and social context.

176. Contemporary Spanish Culture

(4) Fuentes

Prerequisite: Spanish 25 or equivalent.

A survey of the political, religious, social, and philosophical issues in twentieth-century Spanish life and letters.

177. Spanish-American Culture

(4) Williams

Prerequisite: Spanish 25 or equivalent.

Leading social, institutional, intellectual, and artistic trends from the sixteenth century to the present.

178. Mexican Culture

(4) Perissinotto

Prerequisite: Spanish 25, 30, or equivalent. May not be taken for credit by students who have already taken Spanish 180.

Social, institutional, intellectual, and artistic trends in the development of modern Mexico.

180. Mexican Civilization (in English Translation)

(4) Perissinotto

Prerequisite: upper-division standing or consent of instructor. Course not intended for Spanish majors.

Social, institutional, intellectual, and artistic trends in the development of modern Mexico. Taught in English.

181. Hispanic Poetry: 1900 to 1945 in English Translation

(4) Fuentes, Jaimes-Freyre

Reading and discussion of twentieth-century Spanish and Spanish-American poets and trends in their sociohistorical context.

182. Hispanic Poetry Since 1945 in English Translation

(4) Fuentes, Jaimes-Freyre

Study of present-day poets—Paz, Parra, Cardenal, etc.—and trends; conversational and political poetry in English translation.

183AA-ZZ. Selected Authors and Topics in Hispanic Literature

(4) Staff

Prerequisites: Spanish 25, 30, or equivalent. Spanish 110A. Course may be repeated for a total of 20 units, provided letter designation is different. Students limited to one topic per quarter.

Selected authors and topics in Hispanic literature. Topic or author chosen by faculty member.

184. Borges and the Contemporary Spanish-American Short Story

(4) Gallo

Prerequisite: Spanish 25, 30, or equivalent.

The course will deal with Borges' short stories as pioneers of Spanish-American modern trends in narrative literature, and may include works from authors such as Onetti, Fuentes, García Márquez, etc.

185. The Spanish-American Nueva Novela

(4) Gallo

Prerequisite: Spanish 25, 30, or equivalent.

Readings of such authors as Borges, Rulfo, Fuentes, Vargas Llosa, García Márquez, Donoso. Emphasis put on the innovative structure and language brought to Hispanic literature by the so-called *nueva novela*.

187A-B. Modern Hispanic Drama

(4-4) Fuentes, Jaimes-Freyre

Prerequisite: Spanish 25, 30, or equivalent.

A: Representative dramatists of Spain such as Unamuno, Valle-Inclán, García Lorca, Buero Vallejo, and others.

B: Representative Spanish-American dramatists such as Carballido, Solorzano, Wolff, Cuzzani, Márquez, and others.

188. Modernism

(4) Jaimes-Freyre

Prerequisite: Spanish 25, 30, or equivalent.

Introduction to the prose and poetry of Hispanic modernism. Major writers and their most representative works: Martí, Darío, Rodo, Lugones. Lyric poetry, short story, novel, the essay, and other forms will be studied.

189. Vanguard Poetry in Spanish America

(4) Bary
Prerequisite: Spanish 25, 30, or equivalent.
Modernist and vanguard schools: Dario, Herrera y Reissig, Huidobro, Vallejo, Neruda, Paz, and others.

191. The Theme of Don Juan in Spanish Literature

(4) Martínez-López
Prerequisite: Spanish 25, 30, or equivalent.
The theme of *Don Juan* as developed by representative Spanish authors from the sixteenth to twentieth century.

192. Awareness of Self in the Hispanic Tradition

(4) Bary
Literary and iconographic sources of Hispanic self-perception in Spain and Spanish America, contrasted with mainstream western types. Will study the Spanish *New Christian* and its results; also, Native American cultural matrices' effects on perceived ego structure. Taught in English.

195. Senior Honors Independent Research

(4) Staff
Prerequisite: Spanish 25, 30, or equivalent.
The student will engage in research leading to a paper of considerable depth and complexity on a topic dealing with the literature and/or language of Spain and Spanish America.

199. Independent Studies in Spanish

(1-5) Staff
Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in Spanish. Students are limited to five units per quarter and 30 units total in all 198/ 199 courses combined.
Independent studies in selected subjects not covered by course offerings.

GRADUATE COURSES

NOTE: The content of “studies” courses may vary from quarter to quarter and be repeated for credit with the consent of the department graduate adviser.

200. Synchronic Linguistics

(4) Gallo, Perissinotto, Raposo
In-depth study on particular subjects in the field of the phonological, syntactic, or semantic component, or the lexicon, as applied to modern Spanish.

202. Diachronic Linguistics

(4) Gallo, Perissinotto, Raposo
The problem of linguistic change. Current trends in diachronic linguistics as applied to Spanish. In-depth study on particular subjects of the history of the Spanish language, historical grammar of the Spanish language, or Spanish philology.

207. Description and Measurement of Spanish-English Bilingualism

(4) Gallo
Prerequisites: Spanish 100, 107, 108A-B-C or consent of instructor.
Study of the various dimensions of bilingualism. Identification and delimitation of variables; choice of effective and acceptable units, and elaboration of measurement techniques. Validation of appropriate indices. Sampling techniques; proficiency tests.

209. Dialectology

(4) Gallo, Perissinotto
A study of Spanish as it developed and is now spoken in the various parts of Spain and Spanish America, with the distinguishing features of each. The reasons for the distinctive phenomena: morphological, phonological, syntactic, lexigraphic. Indigenous substrata and historical influences (e.g., Anglicisms from the United States) in their formation. Use of texts of different periods.

210A-B-C-D. Spanish Literature for Portuguese Graduate Students

(4-4-4-4) Staff
Prerequisite: graduate standing.
A: Medieval Spanish literature.
B: Golden Age literature.
C: Eighteenth-and nineteenth-century Spanish literature.
D: Twentieth-century Spanish literature.
Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examinations.

211A-B. Survey of Spanish-American Literatures for Portuguese Graduate Students

(4-4) Staff
A: Colonial Spanish-American literature.
B: Nineteenth-century Spanish-American literature.
Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their Ph.D. examinations.

211C. Spanish-American Literature, Twentieth Century, for Portuguese Graduate Students

(4) Staff
Twentieth-century Spanish-American literature. Students will write an extensive paper and be responsible for additional readings to enrich preparation and ready them for Ph.D. examinations.

212A-B. Bibliography and Methods of Research

(4-4) Barrón, Gallo, Perissinotto, Sharrer
A: Approaches and methods for research in Hispanic literature. Study of the main bibliographic sources.
B: Approaches and methods for research in Hispanic linguistics fields.

213. Theory of Literary Criticism

(4) Gallo
Analysis and application of methods of literary criticism in relation to principal texts in Spanish literature, with emphasis on stylistics, the history of Hispanic criticism, and the impact of phenomenology and the social sciences. Techniques of literary scholarship.

214. History of Hispanic Literary Criticism

(4) Avallé-Arce
A diachronic survey of the theory of literature and literary criticism in the West, from the Middle Ages to the present, with particular attention to the Hispanic world.

218. Individual Hispanic Authors and Special Topics

(4) Staff
Course may be repeated for a total of 24 units (six courses, each a different author).
Intensive study of the work of an individual Hispanic author, to be chosen by the instructor.

221A-B. History of Spanish and Portuguese Languages

(4-4) Gallo, Perissinotto, Raposo
Prerequisites: Spanish 121A-B or concurrent attendance.
A: Selected topics in historical phonology in light of recent scholarship.
B: Selected topics in historical morphology and syntax in light of recent scholarship.
Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

222A-B. Studies in Medieval Peninsular Literature

(4-4) Martínez-López, Perissinotto, Sharrer, Avallé-Arce
Selected topic studied in the light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

224A-B. Theory and Analysis of Literature

(4-4) Gallo
Selected topics studied in the light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

230A-B-C-D-E-F. Studies in Spanish Literature of the Sixteenth and Seventeenth Centuries

(4-4-4-4-4-4) Martínez-López, Checa, Avallé-Arce
A total of 24 units is possible for students wishing to enroll in all sections of Spanish 230.
Study courses will be taught under general title, with following divisions.
A: Poetry
B: Narrative prose.
C: Comedia.
D: Auto sacramental.
E: The mystics.
F: Moralists and satirists.

240A-B. Studies on Cervantes

(4-4) Martínez-López, Avallé-Arce
Selected topics studied in the light of recent scholarship. Students will write an extensive paper and be responsible for additional readings to enrich their preparation and ready them for their M.A. and Ph.D. examinations.

245. Studies in Spanish-American Colonial Literature

(4) Avallé-Arce
Selected topics from the sixteenth, seventeenth, and eighteenth centuries.

260. Studies in Nineteenth-Century Spanish Literature

(4) Barrón, Fuentes
Seminars covering selected authors, theses, or genres from the period in question.

270. Studies in Twentieth-Century Spanish Literature

(4) Bary, Fuentes
Seminars covering selected authors, theses, or genres from the period in question.

275. Spanish Literature Since the Civil War

(4) Bary, Fuentes
Spanish literature since the civil war. Spanish literature from 1939 to the present; theatre, poetry, novel.

280. Studies in Twentieth-Century Spanish-American Poetry

(4) Bary, Fuentes, Jaimes-Freyre
Seminar in selected authors and aspects of nineteenth, and twentieth-century Spanish-American poetry. Postmodernist and vanguard schools.

283. El Modernismo

(4) Bary, Jaimes-Freyre
The influence of Ruben Dario and his followers on the prose and poetry of Spanish America and Spain: 1888 to 1920.

285. Studies in Twentieth-Century Spanish-American Fiction

(4) Bary, Jaimes-Freyre
Seminar in selected authors of twentieth-century Spanish-American novel.

290. Literature of a Single Spanish-American Country

(4) Staff
May be repeated for credit for different countries.
An intensive study of the literature of a particular Spanish-American country each time the course is offered.

294A-B. Research Seminar in Spanish-American Literature

(4-4) Staff
In-progress grading for the first quarter; grading for both quarters to be given at the end of the second quarter.

A: Primarily intended to train students in research techniques; background material and selection of topic.

B: Completion of research paper, reporting regularly to class on progress of work.

295A-B. Research Seminar in Spanish Literature

(4-4) Staff
In-progress grading with grading for both quarters to be given at the end of the second quarter.

A: Primarily intended to train students in research techniques; background material and selection of topic.

B: Completion of research paper, reporting regularly to class on progress of work.

296A-B. Research Seminar in Spanish Linguistics

(4-4) Gallo, Perissinotto, Raposo
In-progress grading for the first quarter with grading for both quarters to be given at the end of the second quarter.

A: Primarily intended to train students in research techniques; background material and selection of topic.

B: Completion of research paper, reporting regularly to class on progress of work.

590. Teaching Assistant and Associate Training Course

(2) Staff
Prerequisites: graduate standing and appointment as a teaching assistant or associate in Spanish. Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all first-year teaching assistants and student associates in Spanish.
Instruction in methodology for teaching lower-division Spanish courses at UCSB.

591. Teaching Assistant Practicum

(4) Staff
Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all teaching assistants in Spanish.
Supervised teaching of lower-division Spanish courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

592. Teaching Associate Practicum

(4) Staff
Units earned do not apply toward completion of advanced degrees. S/U grading only. Required of all student associates in Spanish.
Supervised teaching of lower-division Spanish courses at UCSB. Participation in occasional workshops related to the field of teaching will be required.

593. Research Assistant Practicum

(2-4) Staff
Units earned do not apply toward completion of advanced degrees. S/U grading only.
Supervised research in Hispanic literatures, linguistics, or culture.

594AA-ZZ. Special Topics

(1-4) Staff
A special seminar on research subjects of current interest.

595AA-ZZ. Directed Teaching of Literature/Linguistics

(4) Staff
Prerequisites: doctoral candidate with teaching assistant or associate instructor status.
Individual tutorial. Application of research and theory to classroom practice in teaching of undergraduate literature or linguistics courses. The instructor of the literature or linguistics course will supervise the student as collaborator in the planning and teaching of it.

596. Directed Reading and Research

(2-4) Staff
Prerequisites: consent of instructor; approval of department chair.
Individual tutorial. A written proposal for each tutorial must be approved by student's program adviser and by the department chair. The number of units which a student may take in this series depends on the nature of the program and the consent of the adviser or the departmental graduate committee.

597AA-ZZ. Individual Study for M.A. Comprehensive and Ph.D. Examinations

(2-8) Staff
Prerequisites: consent of advisor; approval of department chair. No unit credit allowed toward advanced degrees.
Individual study for M.A. comprehensive and Ph.D. examinations. Instructor should be student's major professor or chair of doctoral committee.

598A-Z. Master's Thesis Research and Preparation

(2-12) Staff
Prerequisites: consent of instructor; approval of department chair. No unit credit granted toward degree.
Only for research underlying the thesis and writing of the thesis.

599AA-ZZ. Ph.D. Dissertation Research and Preparation

(2-12) Staff
S/U grading only; approval of instructor and department chair.
Ph.D. dissertation preparation. Only for research in preparing and writing of the dissertation. Instructor should be the chair of student's doctoral committee.

SPANISH COURSES TAUGHT IN ENGLISH

The following courses require no knowledge of a foreign language. See course descriptions above.

115A-B. Masterpieces of Spanish Literature in English Translation

(4-4)

116. Juan Ruiz: The Book of Good Love

(4)

118A-B. Spain's Culture and Civilization in English Translation

(4-4)

120A-B. Contemporary Spanish-American Fiction in English Translation

(4-4)

126. Spanish Cinema

(4)

127. Latin American Cinema

(4)

142. Don Quixote in English Translation

(4)

171. Hispanic Surrealism

(4)

180. Mexican Civilization

(4)

181. Hispanic Poetry: 1900 to 1945 in English Translation

(4)

182. Hispanic Poetry since 1945 in English Translation

(4)

192. Awareness of Self in the Hispanic Tradition

(4)

Speech and Hearing Sciences

Department of Speech and Hearing Sciences, Snidecor Hall 1693; Telephone (805) 961-2281. Department Chair: Roger J. Ingham.

Faculty

Jeffrey L. Danhauer, Ph.D., Ohio University, Professor (*audiology*)
Sanford E. Gerber, Ph.D., University of Southern California, Professor (*audiology*)
Diane B. Gilchrist, M.A., UC Santa Barbara, Lecturer (*speech and language pathology*)
Theodore D. Hanley, Ph.D., University of Iowa, Professor Emeritus
Janis Costello Ingham, Ph.D., University of Kansas, Professor (*speech and language pathology*)
Roger J. Ingham, Ph.D., University of New South Wales, Professor (*speech and language pathology*)
Roberta A. Jackson, M.A., UC Santa Barbara, Lecturer (*speech and language pathology*)
Robert L. Koegel, Ph.D., UC Los Angeles, Professor (*autism*)
Maurice I. Mendel, Ph.D., University of Wisconsin, Professor (*audiology*)
Carol A. Prutting, Ph.D., University of Illinois, Urbana-Champaign, Professor (*speech and language pathology*)

The speech and hearing sciences major is the only such program among the nine campuses of the University of California. Degrees are offered at the B.A., M.A., and Ph.D. levels. The B.A. program is designed to provide students with a rigorous grounding in the development of normal

communication in the speech, language, and hearing domains and with an understanding of the various factors (developmental, psychological, environmental, genetic, neurologic, anatomical) that can disrupt the communication system and produce communication disorders. Through coursework and observation in the campus clinic, students also gain an appreciation of methods for the assessment of communication in children and adults and an overview of the range of intervention procedures used for the treatment of persons with communication disorders. Preparation for the major includes interdisciplinary coursework central to the thrust of the major in mathematics, physical sciences, behavioral sciences, and the humanities. Students who successfully complete the B.A. in speech and hearing sciences are then prepared to enter graduate programs throughout the country for academic and clinical education leading to the master's degree and to professional preparation as speech-language pathologists or audiologists. Undergraduate students are urged to consult with the department's peer adviser or faculty undergraduate adviser each quarter. The department office will provide lists of the required and elective courses and their sequences.

UNDERGRADUATE PROGRAM

Bachelor of Arts—Speech and Hearing Sciences

Preparation for the major. Speech 50 and 51; Interdisciplinary Skills 1, 5, and 100; Linguistics 20; Philosophy 3; Psychology 1, 5 (or P/STAT 5), and 105; Zoology 25; and Physics 11.

Upper-division major. 46 upper-division units are required, distributed as follows: Speech 100, 101, 120, 122, 128, 129, 130, 150, 153, 166, and 169. Two of the following courses must be taken: Linguistics 186, Anthropology 147, and Sociology 142. Senior honors students are required to take Speech 200 and 182A-B. The latter may be used to fulfill one of the two required electives.

Senior Honors Program

The Department of Speech has a senior honors program for qualified upper-division students. Details concerning the program may be obtained from the department office.

GRADUATE PROGRAM

The graduate program in speech, language, and hearing sciences is designed to prepare scholars and researchers for positions in university and research settings. Students enter the program to pursue a Ph.D., either through the two-campus UCSB-UC San Francisco program or through the program offered solely on the Santa Barbara campus. Entering graduate students normally have an undergraduate degree, or its equivalent, in the area. Many students will have completed master's degrees as well. Students enrolling in the Santa Barbara campus graduate program who do not already have a master's degree in speech and hearing sciences will acquire an M.A. in the process of completing the doctoral program.

A multidisciplinary program leading to the Ph.D. degree in speech, language, and hearing sciences is offered jointly with the University of California, San Francisco. It is the only doctoral program in this field offered in the state of California. Students whose interests center in the hearing sciences or in the study of disordered communication populations found primarily in medical settings should enroll in the two-campus track of the program. Students whose interests center in the development of clinical and applied research skills and the study of disorders of speech, language, and hearing in children and adults should

enroll in the Santa Barbara single-campus track of the program.

Master of Arts—Speech and Hearing Sciences

Students enrolling in the Santa Barbara campus track of the graduate program in speech, language, and hearing sciences will be required to complete a master's degree during the course of their doctoral studies if they do not have such a degree at the time of entry. To earn an M.A. degree, candidates will be required to complete coursework and a supervised clinical practicum and to write a thesis. Completion of the M.A. qualifies the student for membership in the American Speech-Language-Hearing Association and leads to satisfaction of the requirements for the Certificate of Clinical Competence in speech or audiology. The UCSB graduate program is accredited by the American Boards of Examiners in Speech Pathology and Audiology. Students earning the M.A. degree will also be eligible for California licensure as speech-language pathologists or audiologists. Interested students will be able to obtain relevant California credentials for work in the public schools.

Doctor of Philosophy—Speech and Hearing Sciences

As described above, the doctoral program in speech, language, and hearing sciences is offered as a joint program between UCSB and UCSF. At the time of application, students elect to complete their course of study either in the two-campus program or in the program offered solely on the Santa Barbara campus. The student's research interests will determine the program of preference. (Pamphlets describing the research emphases of faculty are available from the department office.) For students enrolled in the two-campus program, residence on each campus is required, and residence after advancement to candidacy is completed on the campus of the student's choice. Both tracks of the Ph.D. program require (1) satisfactory demonstration, by examination and/or coursework, of mastery of the scientific fields considered to be the core of the speech, language, and hearing sciences: speech processes and disorders, language processes and disorders, hearing processes and disorders, and research methodology; (2) proficiency in one or two foreign languages or in a skill area such as computer programming judged by the advisory committee to be necessary to the student's research; (3) satisfactory completion of written and oral qualifying examinations; and (4) completion and oral defense of an acceptable doctoral dissertation. Students in the two-campus program will obtain specialized coursework in the anatomical and physiological aspects of speech, language, and hearing; students in the Santa Barbara campus track of the program will be required to demonstrate proficiency in university-level teaching and will be required to enroll in research activities with at least one faculty member each quarter. Detailed information describing the doctoral program and its faculty is available from the department office. Students are encouraged to interview with relevant faculty prior to application.

SPEECH AND HEARING COURSES

LOWER DIVISION

1. Biocommunication and Biolinguistics

(4) Gerber

What kinds of behavior constitute communication? Considerations of bee dancing, sign language of primates, dolphins. What forms of communication may be described as language? How did speech evolve? How can one tell if communication is disordered?

30. Introduction to Manual Communication

(4) Staff

Prerequisite: consent of instructor.

This course will teach basic communication competencies in Pidgin Sign English (PSE) and beginning American Sign Language (ASL) including basic vocabulary, the manual alphabet, ASL idioms, and ASL syntax. Study of psychosocial aspects of deafness and the deaf culture will be included.

50. Introduction to Communication Disorders

(4) Jackson, Staff

Recommended: Interdisciplinary Skills 100.

Description of speech, language, and hearing of children and adults with a variety of communication disorders including articulation, stuttering, voice, aphasia, cleft palate, and hearing. Includes a consideration of factors which may precipitate and/or maintain such communication disorders.

51. Neuroanatomy and Neurophysiology for Speech, Language, and Hearing

(2) Mendel

Prerequisites: Zoology 25; Biology 20 or 23 or 28.

Autotutorial, audio-visual instruction of neuroanatomy and neurophysiology for speech, language, and hearing. Computerized testing of competence is required.

UPPER DIVISION

100. Observation and Recording: Speech and Language Clinic

(1) Jackson

Prerequisites: Speech 50, and consent of instructor. May be repeated for a maximum of three units total.

Behavioral observation and participation in the clinical setting, with introduction to assessment and remediation procedures.

101. Observation and Recording: Hearing Clinic

(1) Goller

Prerequisites: Speech 50; Speech 129 (or concurrent enrollment) and consent of instructor.

Observation of diagnostic procedures in hearing clinic; recording of audiometric data.

120. Phonemics in Communication Disorders

(4) Gilchrist

Prerequisites: Linguistics 20, Physics 11 (or equivalent background in the acoustical sciences).

Identification of the phonemes of American English and their symbolic representation, including modifying symbols for deviant phonology. Acoustic, physiological, and perceptual parameters of speech sound formation.

122. Anatomy, Physiology, and Neurology of the Speech Mechanism

(4) Staff

Prerequisites: Zoology 25; Speech 51.

Anatomical and physiological bases for an understanding of speech communication.

128. Aural Anatomy and Pathology

(4) Mendel

Prerequisites: Zoology 25; Speech 51.

Anatomy and physiology of the human auditory system; causes and types of hearing impairment; otological considerations; medical and surgical implications.

129. Introduction to Psychoacoustic Principles

(4) Danhauer

Prerequisites: Speech 128; Physics 11.

Introduction to psychoacoustic principles as applied to audiometry; speech reception and perception in normal and hearing-impaired persons; remediation strategies.

130. Auditory Development

(4) Gerber

Prerequisites: Speech 128; Psychology 105

Anatomical, physiological, and behavioral development of hearing in the normal infant. Considerations for examination of the hearing-impaired child.

132. Application of Psychoacoustic Principles to Audiometry and the Hearing Impaired

(2) Danhauer

Prerequisites: Speech 128, 129.

Autotutorial, audio-visual instruction of clinical tests used in the audiologic assessment and management of normally-hearing and hearing-impaired persons. Course uses self-paced modules, laboratory manual, and tests.

150. Phonologic Development and Assessment

(4) Ingham

Prerequisites: Speech 50 and 120; Psychology 105; Linguistics 20.

A review of pertinent literature regarding the natural development and acquisition of the phonologic system, the nature of disordered phonology and articulation, and methods of assessment.

153. Acquisition of Linguistic, Cognitive, and Social Domains

(4) Prutting

Prerequisites: Linguistics 20, Psychology 105.

The literature regarding the acquisition of language among children will be explored across stages of development. Issues and principles leading to competence will be discussed as well as the application of the "normal model" for assessment of language disorders.

166. Principles of Behavior Modification

(4) Koegel

Prerequisite: Psychology 1; Psychology 5 recommended.

Basic principles of operant conditioning and their use in classroom, family, and clinical environments with special reference to speech-language pathology.

169. Introduction to the Management of Communication Disorders

(4) Ingham

Prerequisites: Speech 122, 129, 130, 150, 153, and 166 (concurrent enrollment allowed in any prerequisites listed).

An introduction to the nature, diagnosis, and treatment of the principal speech (phonologic, fluency, voice), language (child and adult), and hearing disorders. Lectures will be given by department faculty who specialize in these areas.

170. Clinical Practice: Hearing

(1-2) Goller

Prerequisites: senior standing, 3.0 grade-point average, and consent of instructor. May be repeated for a maximum of six units. Six units may be combined between Speech 170 and 171.

Supervised application of diagnostic procedures in hearing clinic.

171. Clinical Practice: Speech and Language

(1-2) Gilchrist

Prerequisites: senior standing, 3.0 grade-point average, and consent of instructor. May be repeated for a maximum of six units. Six units may be combined between Speech 170 and 171.

Supervised application of remedial procedures in various clinical settings. Class size limited to assure appropriate supervision.

179. Practicum in Language and Developmental Disabilities

(2-4) Staff

Prerequisites: Speech 166, and consent of instructor. Course may be repeated for a maximum of 12 units.

Students conduct and evaluate supervised research and training projects with developmentally disabled individuals in applied community settings.

182A-B. Senior Honors Thesis

(4-4) Staff

Prerequisites: Speech 200 and senior honors status. Students must take eight units, four each in winter and spring quarters, with a grade given at the end of spring. Open to senior honors students only. Only four units may apply to the major.

Independent work with faculty sponsor culminating in senior thesis.

191. Practicum in Speech and Hearing Sciences

(1-5) Staff

Prerequisites: open to juniors and seniors of proven scholastic ability by consent of instructor; two upper-division courses in the practicum area. Course may be repeated for a maximum of five units.

Provides faculty supervision for students participating in formal, practical research experiences. Written proposal required.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisites: upper-division standing and consent of instructor. May be repeated for a maximum of six units.

Selected topics in accordance with instructor's area of specialization.

196. Infantile Autism Laboratory

(2-4) Koegel

Prerequisite: consent of instructor. Course may be repeated for a maximum of 12 units.

Students design and carry out a supervised experimental analysis or treatment program for an autistic child.

197. Instructional Laboratory

(1-4) Staff

Prerequisites: senior standing; 3.0 grade-point average; consent of instructor.

Tutoring experience for advanced undergraduate students in preparation for graduate education.

199. Independent Studies

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in the major. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Admission by consent of department chair and instructor. Written proposal required

GRADUATE COURSES**200. Models of Research**

(4) Ingham

Prerequisite: consent of instructor.

A review and critical appraisal of research strategies employed by department faculty in their research on speech, language, or hearing processes and disorders.

205. Seminar in Child Development

(4) Koegel

Prerequisite: consent of instructor.

A focus on the study of issues relating to human development from the prenatal period through adulthood. Emphasis will be placed on basic processes in the development of speech, language, hearing, social behavior, intelligence, and abnormal behavior patterns.

206. Prevention and Etiology of Communication Disorders I

(4) Gerber

Prerequisite: consent of instructor.

Prevention and etiology of communication disorders of endogenous origin; chromosomal aberrations; genetic disorders. Prenatal diagnosis, genetic counseling, primary and secondary prevention. (Offered in alternate years.)

207. Prevention and Etiology of Communication Disorders II

(4) Gerber

Prerequisite: consent of instructor. Speech 206 is not a prerequisite.

Prevention and etiology of communication disorders of exogenous origin; teratogenic and iatrogenic etiologies; toxins, trauma. Programs of prevention, epidemiological concerns. (Offered in alternate years.)

210A. Special Studies: Orofacial Anomalies

(1) Jackson

Prerequisite: consent of instructor. Course may be repeated for a maximum of four units.

A review of etiology, symptomatology, assessment, and rehabilitation for speech production disorders attributed to orofacial anomalies, including various genetic syndromes.

210AP. Oral-Facial Anomalies: Practicum

(1-2) Jackson

Prerequisites: graduate standing, consent of instructor. Course may be repeated up to eight units.

Supervised clinical practicum with patients who have oral-facial anomalies.

210B. Special Studies: Language Learning Disabilities

(1) Cole

Prerequisite: consent of instructor. Course may be repeated for a maximum of four units.

A review of etiology, symptomatology, and the role of speech-language professionals in the assessment and treatment of children with language learning disabilities.

210BP. Language Learning Disabilities: Practicum

(1-2) Cole

Prerequisites: graduate standing; consent of instructor. Course may be repeated up to eight units.

Supervised clinical practicum with clients who have language learning disabilities.

211A. Special Studies: Parent-Infant Habilitation Programs

(1) Goller

Prerequisite: consent of instructor. Course may be repeated for a maximum of eight units.

Study of theories and procedures relating to speech and language development of the young hearing impaired child. Emphasis will be placed on a parent-child centered approach involving parent counseling and a team approach to choice of language mode.

211AP. Parent-Infant Habilitation Program: Practicum

(1-2) Goller

Prerequisites: graduate standing, consent of instructor. Course may be repeated up to eight units.

Supervised clinical practicum with hearing-impaired infants and young children. Includes parent counseling and training.

211B. Special Studies: Auditory Rehabilitation

(1) Dearinger

Prerequisite: consent of instructor. Course may be repeated for a maximum of eight units.

Studies of rehabilitative and coping strategies to improve communication difficulties of the hearing impaired. Both individual and group settings will be investigated

211BP. Auditory Rehabilitation: Practicum

(1-2) Dearinger

Prerequisites: graduate standing, consent of instructor. Course may be repeated up to eight units.

Supervised clinical practicum with adult hearing-impaired clients regarding communication difficulties.

215. Assessment and Evaluation of Speech and Language

(1-4) Staff

Prerequisite: consent of instructor. Course may be repeated for a maximum of four units.

Review of literature as it pertains to assessment of communicative disorders. Discussion of issues of assessment including use of standard tests and clinician constructed tasks. Laboratory is required. Application of assessment procedures in speech/language.

216. Advanced Clinical Practicum: Clinical Supervision

(1-4) Gilchrist

Prerequisites: at least three quarters successful completion of clinical practicum and consent of instructor. Students who have received credit for Speech 271C will not receive credit for this course.

Clinical practicum in supervision will be conducted under the direction of the instructor. Topics in clinical supervision will be discussed.

217. Graduate Field Seminar Summer Externship

(2-6) Jackson

Prerequisites: either Speech 237 or 246; consent of faculty committee. Students who have received credit for Speech 296 will not receive credit for this course.

Externship including intensive field experience, seminars, observation, and participation in service program in speech and hearing conducted in a teaching hospital or community center.

218A. Curriculum Instructional Procedures and Material: Speech and Language

(2) Gilchrist

Prerequisites: consent of instructor; concurrent enrollment in Speech 218B. Students who have received credit for Speech 298A will not receive credit for this course.

Remedial and instructional procedures, including applicable legislation and Education Code to serve the speech and language handicapped population in the public schools.

218B. Student Teaching: Speech and Language

(6) Gilchrist

Prerequisites: completion of one graduate year, decision of faculty committee, and completion of 150 clinical clock hours. Students who have received credit for Speech 298B will not receive credit for this course.

Students must complete a total of 100 clock hours of actual teaching exclusive of observation in the public school setting.

219A. Curriculum Instructional Procedures and Materials: Hearing

(2) Goller

Prerequisites: consent of instructor, concurrent enrollment in Speech 219B. Students who have received credit for Speech 298C will not receive credit for this course.

Remedial and instructional procedures including applicable legislation and Education Code to serve the hearing handicapped in the public schools.

219B. Student Teaching: Hearing

(6) Goller

Prerequisites: completion of one graduate year, decision by faculty committee, and completion of 150 clinical clock hours. Students who have received credit for Speech 298D will not receive credit for this course.

Student must complete a total of 100 clinical clock hours of education audiology duties exclusive of observation in the public school setting.

222. Auditory Pathology

(4) Gerber

Prerequisites: consent of instructor; concurrent enrollment in Speech 226.

Diagnosis of hearing disorders viewed from the perspective of auditory organ pathology; conductive, cochlear, and retrocochlear disorders; pathological mechanisms and consequences.

223. Electrophysiologic Audiology

(4) Mendel

Prerequisite: consent of instructor.

Electrophysiology of hearing including acoustic, mechanical, and electrical events; measurement techniques including electrocochleography, single unit responses, and auditory evoked potentials; other physiologic measures of auditory function and a comparison of measures.

223L. Electrophysiological Audiology: Clinical Laboratory

(1-4) Goller

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Supervised application of auditory evoked potential procedures will be examined, including both neurologic and audiometric evaluations; development of clinical research questions and strategies.

224. Pediatric and Childhood Audiology

(4) Gerber

Prerequisite: consent of instructor.

Developmental anatomy, physiology, and pathology of hearing. Screening and diagnostic audiometry for neonates, infants, and children. Genetics of hearing and deafness; etiology of communicative disorders.

224L. Pediatric Audiology Clinical Laboratory

(1-4) Dearinger

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Supervised application of comprehensive evaluation of the pediatric population (0-3 years). Emphasis on developing special diagnostic techniques with the hearing-impaired and young difficult to test children. Development of clinical research questions and strategies.

226. Clinical Audiology

(4) Mendel

Prerequisites: consent of instructor; concurrent enrollment in Speech 222. Students who have received credit for Speech 226A-B will not receive credit for this course.

Study of advanced audiologic diagnostic procedures and related research; advanced techniques and interpretation in pure tone audiometry; speech tests, special tests for determination of site of lesion, electrophysiologic audiometry and central auditory tests.

226L. Clinical Audiology Laboratory

(1-4) Goller

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Supervised application of differential diagnostics of the auditory system, with emphasis placed on development of an efficient test battery to determine site of lesion; use of diagnostic and research instrumentation; development of clinical research questions and strategies.

227. Auditory Rehabilitation and Electroacoustic Assessment

(4) Danhauer

Prerequisites: Speech 226, consent of instructor.

Contemporary theoretical, methodological, and experimental approaches to understanding and improving communication of the hearing impaired. Evaluation of electroacoustic amplification systems for the hearing impaired is also examined.

227L. Electroacoustic Assessment Clinical Laboratory

(1-4) Dearinger

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Assessment and evaluation of a variety of amplification systems for the hearing impaired. Although personal amplification systems will be stressed, group systems and home devices for the deaf will be included. Supervised clinical practicum accompanied by development of clinical research questions and strategies.

228. Medical Audiology

(4) Mendel

Prerequisite: consent of instructor.

Advanced study of aural anatomy and physiology; causes and types of hearing impairment; otological considerations; temporal bone anatomy; medical and surgical implications.

229. Etiology and Diagnosis of Disorders of the Vestibular System

(4) Staff

Prerequisite: consent of instructor. Students who have received credit for Speech 233 will not receive credit for this course.

Physiological acoustics; use of instruments and methods to assess physiological responses to sound: encephalography, cardiography, cochleography, etc.

232. Assessment and Intervention in Child Language

(4) Prutting

Prerequisite: consent of instructor. Students who have received credit for Speech 255 will not receive credit for this course.

Assessment and intervention issues in language will be explored. Intervention programs will be based on principles inherent to the normal and disordered language systems.

232L. Language Intervention Clinical Laboratory

(1-4) Jackson

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

The application of assessment and intervention principles in language disorders, accompanied by supervised clinical practicum; the development of clinical research questions and strategies.

234. Management of the Hearing-Impaired Child

(4) Gerber

Prerequisite: consent of instructor.

The pediatric, otological, audiological, and educational procedures relevant to management of the hearing-impaired child from birth through the early school years.

235. Graduate Seminar in Autism I

(4) Koegel

Prerequisites: consent of instructor; concurrent enrollment in Speech 235L. Students who have received credit for Speech 295 will not receive credit for this course.

First part of a two-quarter course. (the second part being Speech 265). Discussion of critical issues in the field of autism with emphasis on diagnosis and treatment with respect to speech, language, hearing, and behavioral disorders.

235L. Autism Clinical Laboratory

(1-4) Jackson

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Study of methods of assessment and treatment of speech and language processes in autistic children, accompanied by clinical practicum. Development of clinical research questions and strategies.

236. Language Acquisition

(4) Prutting

Prerequisite: consent of instructor. Students who have received credit for Speech 254 will not receive credit for this course.

The literature regarding the acquisition of the linguistic, cognitive, and social domains; issues and principles leading to language competence as well as the application of the "normal model" for the assessment and intervention of language disorders.

237. Neuropathologies of Language Processes

(4) Staff

Prerequisite: consent of instructor. Students who have received credit for Speech 257 will not receive credit for this course.

Review of research regarding the effects of brain injury on language comprehension, expression, and processing; study of historical and current assessment and intervention procedures; includes aphasia, disorders produced by closed head trauma, and by right-brain injury.

237P. Neuropathologies in Speech and Language Practicum

(1-2) Cole

Prerequisites: graduate standing; consent of instructor. Course may be repeated up to eight units.

Supervised clinical practicum with patients with aphasia and related disorders accompanied by discussion and readings.

240. Disorders of Phonation

(4) Staff

Prerequisite: consent of instructor. Students who have received credit for Speech 293 will not receive credit for this course.

Current methods of assessment and remediation of disorders of phonation in adults and children are examined. Normal voice production is reviewed, while pathological voice production is examined in detail. (Offered in alternate years.)

240L. Voice Disorders Clinical Laboratory

(1-4) Gilchrist

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Study of methods of assessment and treatment of varieties of voice disorders in children and adults, accompanied by supervised clinical practicum; development of research questions and strategies.

241. Speech Production

(4) Staff

Prerequisite: consent of instructor. Students who have received credit for Speech 250 will not receive credit for this course.

Study of speech production with emphasis on the analysis of the acoustic characteristics of speech using the digital sonograph. Acoustics, source-filter theory, and anatomy/physiology will be integrated in an understanding of general production principles. Special emphasis is given to phoneme identification on sonograms and to examination of coarticulatory and prosodic effects.

242. Seminar in Stuttering

(4) R. Ingham, J. Ingham

Prerequisite: consent of instructor. Students who have received credit for Speech 267 will not receive credit for this course.

Identification and development of stuttering behavior in children and adults; procedures for description and measurement of such behaviors; special attention to the design of treatment programs incorporating various remediation approaches including behavior modification, counseling, group treatment.

242L. Stuttering Clinical Laboratory

(1-4) Cole

Prerequisite: consent of instructor.

In-depth discussion of the clinical literature in stuttering and laboratory exercises regarding measuring processes, assessment, and implementation of various treatment procedures for establishment, transfer, and maintenance of stutter-free speech; supervised clinical practicum; development of research questions and strategies.

243. Seminar in Articulation and Phonology

(4) Ingham

Prerequisite: consent of instructor. Students who have received credit for Speech 256 will not receive credit for this course.

A study of the experimental and clinical literature dealing with the measurement and treatment of articulatory and phonological disorders in children and adults. Theoretical and applied issues will be included.

243L. Articulation and Phonology Clinical Laboratory

(1-4) Gilchrist

Prerequisite: consent of instructor. May be repeated for a maximum of eight units.

Study of assessment and treatment issues in regard to articulatory and phonologic disorders primarily in children, accompanied by supervised clinical practicum; development of research questions and strategies.

244. Acoustic Analysis I

(4) Staff

Prerequisites: Speech 241; consent of instructor.

Study of speech and voice production with emphasis on acoustic properties and methods of analysis. Students will be taught to acoustically analyze speech signals using signal processing software, A/D, and D/A techniques and will learn basic speech processing techniques.

246. Motor Speech Disorders

(4) Staff

Prerequisite: consent of instructor. Students who have received credit for Speech 252 will not receive credit for this course.

First three weeks of course will include study in neuroanatomy and physiology. Remaining seven weeks will explore the motor disorders of the dysarthrias and apraxia and will focus on remediation, combining medical and symptomatic approaches (Offered in alternate years.)

246P. Motor Speech Disorders: Practicum

(1-2) Gilchrist

Prerequisites: graduate standing, consent of instructor. Course may be repeated up to eight units.

Supervised clinical practicum with dysarthric and apraxic patients will be accompanied by readings and discussion.

251. Speech Perception and Assessment

(4) Danhauer

Prerequisite: consent of instructor. Students who have received credit for Speech 277 will not receive credit for this course.

Study of the speech perception process; review of studies and theories of speech perception; emphasis on distinctive feature theory and application; development and evaluation of speech perception instruments for normally hearing and hearing impaired adults. (Offered in alternate years.)

253. Advanced Electrophysiological Audiology

(4) Mendel

Prerequisites: Speech 223; consent of instructor. Students who have received credit for Speech 278 will not receive credit for this course.

Theoretical bases of electrophysiologic audiology, historical development, independent use of instruments and methods to assess physiologic responses to sound. Consideration of electrocochleography and cortical potentials.

258. Psychoacoustics

(4) Danhauer

Prerequisite: consent of instructor. Students who have received credit for Speech 275 will not receive credit for this course.

Research methods in psychological and physiological acoustics; review of significant studies in frequency amplification and duration parameters; use of instrumentation. (Offered in alternate years.)

259. Cochlear Prostheses

(4) Danhauer

Prerequisite: consent of instructor.

This course covers the study of cochlear function, disorders, and remediation via prostheses and instrumentation with emphasis on electrical stimulation and cochlear implants. Test protocols and their application for assessing patients' speech perceptions abilities are also covered.

260. Speech Perception in Early Childhood

(2) Ingham, Gerber

Prerequisite: consent of instructor.

Review and critique of historic and current literature regarding the development and measurement of speech perception in infants and young children and the relationship of auditory/speech perception to the development of language, especially phonology.

262. Theoretical Aspects of Language

(4) Prutting

Prerequisite: consent of instructor. Students who have received credit for Speech 281 will not receive credit for this course.

Linguistic, cognitive, and social theories of language will be presented as well as a critical analysis of the contribution made by various theoretical positions. The application of language theories to the field of language remediation will be presented

265. Graduate Seminar in Autism II

(4) Koegel

Prerequisites: Speech 235, 235L, and concurrent enrollment in Speech 265L; consent of instructor.

Second part of a two-quarter course (the first part being Speech 235). Discussion of critical issues in the field of autism with emphasis on diagnosis and treatment with respect to speech, language, hearing, and behavioral disorders.

265L. Autism Clinical Laboratory II

(1-4) Koegel

Prerequisites: Speech 235, 235L, and concurrent enrollment in Speech 265; consent of instructor.

Advanced clinical research activities with autistic children.

272. Advanced Seminar in Stuttering

(4) Ingham

Prerequisites: Speech 242, consent of instructor.

Analysis of current issues in experimental and clinical research in stuttering. Review of research on measurement, physiology, language, genetics, feedback systems, treatment, generalization/maintenance, and treatment outcome evaluation.

273. Advanced Seminar in Articulation and Phonology

(4) Ingham

Prerequisite: consent of instructor.

In-depth study of current research issues in articulation and phonology including analysis of natural processes, generalization vs. automatization, consequences of articulatory and phonologic views for understanding disordered speech production; student-designed research projects to examine hypotheses of current importance.

288. Within-Subject Experimental Research Designs

(4) J. Ingham, R. Ingham

Prerequisite: consent of instructor.

Investigation of single-subject research designs, their internal and external validity and the kinds of questions to which they can be applied. Students will read and critique relevant literature, make class presentations, and design a within-subject experiment.

289. Methods and Issues in Clinical Research

(4) Ingham

Prerequisites: Speech 200 and 288.

A critical review of models used in clinical research in the communication disorders. Special emphasis on measurement, design, and interpretation in this research.

500. University Teaching in Communication Sciences and Disorders

(2) Staff

Prerequisite: appointment as teaching assistant. May be repeated for a maximum of 12 units. No unit credit allowed toward advanced degree.

Theory of teaching communication sciences and disorders at the college level. Topics include the preparation of behavioral objectives and course syllabi, construction of tests, and grading practices. Each quarter, student will enroll under direction of faculty for whom he or she is a teaching assistant.

501. Research Seminar: Communication Sciences and Disorders

(1) Staff

Prerequisite: Graduate standing in speech and hearing sciences; must be taken every quarter of graduate enrollment. No unit credit allowed toward advanced degree.

Discussion and criticism of current research activity.

502. Apprentice Teaching in Communication Sciences and Disorders

(4) Staff

Prerequisite: Speech 500 (may be taken concurrently). No unit credit allowed toward advanced degree.

Application of theory to the practices of teaching college courses in speech and hearing sciences. Students will issue assignments, conduct class discussions, prepare and deliver lectures, score tests, and assign grades under the supervision of the faculty member who is the course director.

594. Special Topics

(1-4) Staff

Prerequisite: consent of instructor. May be repeated with a different topic for a maximum of nine units.

Selected topics in accordance with instructors' specializations.

595. Group Studies

(3) Staff

Prerequisite: consent of instructor. May be repeated with a different topic for a maximum of nine units.

Critical review of research organized on a topic basis in accordance with instructors' specializations.

596. Directed Reading and Research

(2-4) Staff

Prerequisite: consent of instructor. May be repeated for a maximum of ten units.

Individual tutorial. A written proposal must be approved by the department chair.

597. Preparation for the Qualifying Examination

(1-4) Staff

Prerequisite: consent of graduate adviser. No unit credit allowed toward advanced degree. Directed group or individual preparation for the master's or doctoral qualifying examination.**598. Master's Thesis Research and Preparation**

(1-12) Staff

Prerequisite: consent of thesis adviser. No unit credit allowed toward advanced degree. The thesis is done under the direction of the chair of a student's thesis committee.**599. Dissertation Preparation**

(1-12) Staff

Prerequisites: consent of instructor; advancement to candidacy.

This course is reserved for writing the dissertation.

Statistics and Applied Probability

Program in Statistics and Applied Probability,
South Hall 5521; Telephone (805) 961-2129.
Program Chair: Joseph Gani.

Faculty

Garish Aras, Ph.D., Michigan State University,
 Assistant Professor (*probability and statistics*)

Joseph Gani, D. Sc., London University,
 Professor (*statistics, applied probability and bio-mathematics*)

Sreenivasa R. Jammalamadaka, Ph.D., Indian
 Statistical Institute, Professor (*probability and statistics*)

Venkata Jandhyala, Ph.D., University of
 Western Ontario, Visiting Assistant
 Professor (*statistical inference, stochastic processes*)

Bhimasankaram Pochiraju, Ph.D., Indian
 Statistical Institute, Visiting Associate
 Professor (*linear models, multivariate analysis*)

James B. Robertson, Ph.D., Indiana University,
 Professor (*probability, ergodic theory*)

Gordon K. Smyth, Ph.D., The Australian
 National University, Lecturer / Academic
 Coordinator (*nonlinear estimation, generalized linear models, inference*)

Milton Sobel, Ph.D., Columbia University,
 Professor (*statistics decision theory*)

Petar Todorovic, Ph.D., University of Belgrade,
 Visiting Professor (*stochastic processes and applications in hydrology*)

Lyn R. Whitaker, Ph.D., UC Davis, Assistant
 Professor (*statistics, probability theory*)

UNDERGRADUATE PROGRAM

Bachelor of Science — Mathematical Sciences

The B.S. in mathematical sciences is an applied mathematics degree which is divided into three concentrations: physical sciences, operations research, and statistics. Completion of one of the concentrations will not be formally acknowledged on the student's official transcripts or diploma. See the undergraduate program in mathematics for descriptions of the concentrations in physical sciences and operations research.

Pre-major requirements (statistics concentration). Students must complete all pre-major courses with a 2.5 or higher grade-point average. Computer Science 10 and 11FO are excluded as part of the pre-major grade-point average computation. Entry into the pre-major does not guarantee admission to full major status. Upon satisfactory completion of pre-major requirements, students may petition to be accepted into full major status. In the first two years at UCSB, all students who major in mathematical sciences the following pre-major requirements: Mathematics 7A-B-C or 3A-B-C or appropriate portions of 3S; 11A-C or 5A-B-C; Computer Science 10 and 11FO; and Mathematics 8.

Upper-division major (statistics concentration). Required: Fifty-two upper-division units in mathematics and probability and statistics, excluding Mathematics 100A-B, 192, 193, and P/STAT 133A-B-C. The 52 units must include the following specific requirements: P/STAT 120A-B-C and four courses from among P/STAT 122, 123, 126, 130, 160A, 160B. Up to four of the 52 units may be in courses from related departments. All programs must be approved by the major adviser.

GRADUATE PROGRAM

Three programs are available: M.A. in Statistics, M.A. in Statistics—Applied Statistics Track, and Ph.D. in Mathematics (Statistics Track).

Master of Arts—Statistics

Admission

A candidate for admission must fulfill the academic requirements for graduate study and have had undergraduate course work in linear algebra and analysis. Students who do not have credit for P/STAT 120A-B-C, or an equivalent course, will be required to take it as it is a prerequisite for required graduate courses in the program. It is also desirable for students to have had some undergraduate work in applied mathematics and/or applied statistics. In addition, students must have some basic capability in programming in FORTRAN or another appropriate computer language. When necessary, supplemental undergraduate courses may be required; they will not count toward the 42-unit course requirement described below.

Degree Requirements

Two plans are available for completing the degree: Plan 1 (thesis option), and Plan 2 (examination option). Candidates in both plans must complete 42 units of approved upper-division or graduate work, including any two of the graduate course sequences P/STAT 207A-B-C, P/STAT 213A-B-C, P/STAT 214A-B-C, and P/STAT 220A-B-C, if these or equivalent courses have not been taken prior to entering the program.

Under Plan 1, students must pass a comprehensive examination in one statistics area requirement, and prepare an acceptable thesis, supervised by a faculty member, and defend it before a faculty committee. A maximum of six of the 42 units may be in P/STAT 596/598.

Under Plan 2, students must pass a comprehensive examination in two statistics area requirements described under the heading "Doctor of Philosophy—Mathematics," below. Borderline cases with respect to this examination will be asked to take a subsequent oral examination on the part in which they show a deficiency.

Master of Arts—Applied Statistics Track

Admission

A candidate for admission must fulfill the scholarship requirements for graduate study and have had undergraduate course work equivalent to P/STAT 120A-B-C and a basic computer science course at the level of Math 6A or higher. Students may be admitted who do not satisfy all requirements, but they will be asked to take supplementary undergraduate courses which will not count toward the 42-unit course requirement described below.

Degree Requirements

The requirements for the applied statistics track will be kept flexible so that joint programs of study with other departments and schools can be worked out to suit the needs of individual students. These individualized programs should form a coherent plan and are subject to the approval of the statistics faculty. Courses that have substantial overlap will not be allowed.

Candidates must complete 42 units of upper-division or graduate work approved by the graduate adviser in statistics. At least 24 of these units must be at the graduate level. They should include P/STAT 122 and at least four but no more than eight units of 220A-B-C and 230. The remaining 18 to 22 units of credit may be obtained by taking any upper-division or graduate courses from the Probability and Statistics listing, excluding 107, 120A-B-C, 121A-B-C, 133A-B-C, and 201A-B, or any of the approved courses from the other applied disciplines. The graduate adviser can supply a list of approved courses.

Students must pass a comprehensive written examination based on P/STAT 120A-B-C, P/STAT 122 and 220A-B-C. Students who receive borderline grades on this examination will be asked to take a subsequent oral examination.

Doctor of Philosophy—Mathematics (Statistics Track)

Degree Requirements

Area Requirements. Ph.D. students in statistics will be required to fulfill three statistics and probability area requirements and a pure mathematics area requirement. Suggested courses in preparation for these examinations are available from the graduate adviser. Students are also required to be proficient in linear algebra at least to the level of Math 108A-B and will be advised to take this course if deficient.

Foreign language requirement. Students must show reading proficiency in two foreign languages, chosen from French, German, Russian, Chinese, and Japanese. As this requirement must be met before advancement to candidacy, students are advised to start preparing as soon as possible. Students can substitute the acquisition of expertise in computer programming for the study of one of the two languages, with the approval of the departmental statistics committee. The amount of work required will be equivalent to the study of a foreign language. Students who already have appropriate computing experience may be required to perform a statistical project demonstrating their knowledge.

Course requirements. Students must pass 72 units of graduate courses in statistics with grades of at least a B or S. Graduate courses in statistics from other departments may be included, but should have prior approval from the graduate adviser in statistics and/or the thesis adviser. These advanced courses should form a coherent plan and facilitate the selection of an area for dissertation research.

The student advances to candidacy by satisfactorily completing four written examinations and one preliminary oral examination. The student is required to complete a dissertation representing an original contribution to knowledge; the thesis is defended before a faculty committee.

The Statistical Laboratory

The Statistical Laboratory (Statlab) has been providing UCSB graduate students with statistical consulting advice since 1981. The Statistics and Applied Probability Program is endeavoring to expand the activities of the laboratory and to establish it as an active center of statistical consulting on campus, offering a wide range of statistical computing, modelling, analysis, and forecasting services. The Statlab offers graduate students practical experience in statistical consulting while providing the UCSB campus with professional statistical services.

STATISTICS AND APPLIED PROBABILITY COURSES

LOWER DIVISION

5. Analysis of Data in Psychology

(5) Staff

Prerequisite: Mathematics 1 or equivalent. This course is the same as Psychology 5.

Elementary statistical inference, including the sign test, z test, t test, correlation and chi-squared test. Simple descriptive statistics. The logic of statistical inference, including the central limit theorem and discussion of sampling distributions.

33. Statistics

(4) Staff

Not open for credit to students who have received credit for PSTAT 33S or upper-division PSTAT courses.

Random variables, sampling distribution, estimation, hypotheses testing, correlation and regression, other topics from statistics.

33S. Self-Paced Statistics

(1-5) Staff

Prerequisite: a calculus prerequisite of Mathematics 34A-B or equivalent will be required for the fifth unit.

A self-paced course covering the same material as PSTAT 33. Credit is assigned in proportion to work completed. A student who does not complete coursework as designated by the instructor by the drop deadline of the quarter will be administratively dropped from the course. The final examination is tailored to modules completed.

UPPER DIVISION

105. Introduction to Nonparametric Methods

(4) Staff

Prerequisite: PSTAT 33 or equivalent.

An applied statistics course where we examine modern, practical (distribution-free) significance tests: permutation tests, sign tests, ranking methods. This course does not require calculus, and is designed for students in engineering, the physical, biological, and social sciences, and mathematics.

107. Discrete Probability Theory

(4) Staff

A systematic development of probability theory for finite sample spaces, conditional probability,

independence, counting techniques, binomial distribution, random variables, expectation, and other topics such as Markov chains, Poisson distributions, and hypothesis testing.

120A-B-C. Probability and Statistics

(4-4-4) Staff

Prerequisites: Mathematics 3C or 7C or appropriate portions of Mathematics 3S and 8 and 11A or 5B. Not open to students who have received credit for PSTAT 121A-B or Economics 141A-B.

Basic concepts of probability, limit theorems, discrete and continuous random variables, derived distributions, some statistical applications, point estimation, random sampling, tests of hypotheses, confidence intervals.

121A. Probability and Statistics for Computer Science I

(4) Staff

Prerequisites: Mathematics 3C or 7C or appropriate portions of Mathematics 3S, 8, and 11A or 5B. Not open to students who have received credit for PSTAT 120A.

Basic concepts of probability; random variables and distributions; binomial, normal, and other probability models; sampling distributions and elements of statistical inference.

121B. Probability and Statistics for Computer Science II

(4) Staff

Prerequisite: PSTAT 121A.

Transformations of discrete and continuous random variables, random number generation, different methods and efficiency evaluation, tests of randomness including the chi-square test, the serial test, the run test, etc.; simulation methods for some simple problems of statistical inference.

122. Design and Analysis of Experiments

(4) Staff

Prerequisites: PSTAT 120A-B or 121A-B or consent of instructor.

Linear models; least squares theory; one-way and two-way analysis of variance; multiple comparison procedures; fixed, random, and mixed effects models; basic designs including completely randomized design, randomized blocks design, incomplete block designs, latin squares, factorial and fractional factorial designs; analysis of covariance.

123. Sampling Techniques

(4) Staff

Prerequisite: one quarter of upper-division mathematical statistics or consent of instructor.

An elementary development of the statistical methods used to design and analyze sample surveys. Basic ideas: estimates, bias, variance, sampling and nonsampling errors; simple random sampling with and without replacement, ratio and regression estimates; stratified sampling; systematic sampling; cluster sampling; sampling with unequal probabilities, multistage sampling. Examples from various fields will be discussed to illustrate the concepts including sampling of biological populations, opinion polls, etc.

124A-B. Ranking and Selection

(4-4) Staff

Prerequisites: PSTAT 120A-B or 121A-B (PSTAT 120B and 121B may be taken concurrently).

Ranking and selections from the parametric and nonparametric point of view, major emphasis on fixed sample size procedures. Both the indifference zone approach as well as the subset approach are considered. Applications to normal, binomial, and multinomial problems; complete ordering comparisons with a control, and the selection of the t test out of k populations.

126. Regression Analysis

(4) Staff

Prerequisites: PSTAT 120A-B or 121A-B or consent of instructor.

Linear and multiple regression, analysis of residuals, variable and model selection including stepwise regression, and analysis of covariance. Other topics may include logistic regression, probit analysis, nonlinear regression and nonparametric regression, and correlation methods.

130. Statistical Computing

(4) Staff

Prerequisite: PSTAT 120B or 121B or 133B or equivalent.

Survey of the various computer packages available for statistical analysis including SPSS, BMD Minitab, etc. The use of these packages in solving statistical problems will be discussed utilizing practical examples.

132C. Introduction to Operations Research

(4) Staff

Prerequisites: Mathematics 132A-B and either PSTAT 120A or PSTAT 121A or Economics 141A. Same course as Mathematics 132C.

Review of probability; queuing theory; waiting models; birth and death processes; applications; inventory theory; Markov chains, applications, and decision models; computer simulation; component and system reliability; decision analysis; list and area searching.

133A-B-C. Introduction to Statistical Methods

(4-4-4) Staff

Prerequisites: upper-division standing; an equivalent lower-division course; consent of instructor. Not open to mathematics majors. Students who have had PSTAT 33 cannot receive credit for PSTAT 133A, but may be admitted into PSTAT 133B or 133C with the consent of instructor.

Introduce basic ideas of probability and various topics in statistical methods with minimum use of calculus; will rely on use of personal computers. Topics: probability, random variables and distributions, expectation and variance, binomial, normal, and other probability models. Statistical inference, point estimation and confidence intervals, testing. Statistical tests, correlation, and regression.

134. Sequential Analysis

(4) Staff

Prerequisites: PSTAT 120A-B or 121A-B.

This course will cover sequential methods and the associated statistical inference. Topics discussed will include sequential probability ratio test and its optimal properties, application to sequential testing, t-test, sequential estimation.

140. Statistics in Industry

(4) Staff

Prerequisite: PSTAT 120A or 133A or equivalent.

Review of basic probability distributions and concepts in estimation and testing hypotheses, statistical quality control charts for the mean, standard deviation, the range, the fraction defective, and number of defects; sampling by attributes and variables; acceptance sampling, single, double, and multiple sampling plans, choice of acceptable quality level, average outgoing quality limit and lot tolerance percent defective values; Dodge-Romig and Mil-Std 105 plans; some aspects of life testing and reliability.

160A-B. Applied Stochastic Processes

(4-4) Staff

Prerequisites: Mathematics 108A and PSTAT 120A or PSTAT 121A.

Random walks, Markov chains, Poisson processes, Markov processes; second order processes, Wiener process stochastic differential equations, optimal prediction spectral distributions; queueing theory. Stochastic processes in reliability, stochastic models for time series.

190AA-ZZ. Special Topics in Statistics

(4) Staff

Prerequisites: upper-division standing; an equivalent lower-division course; consent of instructor. May be repeated up to 12 units provided letter designation is different. Only eight units of credit allowed for the major. Information about the special topics to be presented may be obtained from the office of the Statistics Program.

192. Computer Laboratory

(1) Staff

Prerequisites: upper-division standing; an equivalent lower-division course. May be repeated in conjunction with different courses for up to a total of six units of credit. Units do not count for upper-division mathematics major requirements.

Offered each quarter in conjunction with specified upper-division statistics classes. Students enrolling in any of the specified classes are eligible to enroll in this course concurrently. Students will become familiar with certain computer facilities and with some computing languages(s) which will be used to solve problems designed to enrich and supplement the material in the specified statistics course.

193. Internship in Statistics

(1-4) Staff

Prerequisites: upper-division standing; an equivalent lower-division course; consent of instructor. Limited to no more than four units total. Credit will not be given toward upper-division mathematics major requirements. Faculty sponsored academic internship in industrial or research firms.

194. Group Studies for Advanced Students

(1-4) Staff

Prerequisites: upper-division standing; an equivalent lower-division course; consent of instructor. May be repeated to a maximum of 12 units but only four units may be credited toward the major. Enrollment normally limited to 12 or fewer students. Lectures and discussions on special topics in probability and statistics.

199. Independent Studies in Statistics

(1-4) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum grade-point average of 3.0 for the preceding three quarters; 3) have completed at least two upper-division courses in statistics. Students are limited to five units per quarter and 30 units total in all 198/ 199 courses combined.

GRADUATE COURSES

Students enrolling in graduate courses will be expected to have taken PSTAT 120A-B-C or equivalents.

207A-B-C. Statistical Theory

(4-4-4) Staff

Prerequisites: PSTAT 120A-B-C or consent of instructor.

Univariate and multivariate distribution theory; generating functions; inequalities in statistics; order statistics; estimation theory; maximum likelihood estimation, sufficiency, Rao-Blackwell theorem; testing hypotheses; ranking and selection; sequential vs. nonsequential techniques.

208A. Principles of Programming for Operations Research

(4) Staff

Prerequisites: Mathematics 132A-B.

Theory and computational techniques of linear programming. Duality theory and simplex methods. Network flow problems and algorithmic methods. Introduction to integer and nonlinear programming.

208B. Stochastic Models for Operations Research

(4) Staff

Prerequisites: PSTAT 160A-B.

Principles of stochastic modeling. Queueing theory, the analysis of simple single-server queues, congestion theory. Inventory and storage models, inventory control. Markov decision processes.

208C. Statistical Methods for Operations Research

(4) Staff

Prerequisites: PSTAT 120A-B and PSTAT 126.

Quality control, acceptance sampling plans and acceptance procedures. Reliability theory and survival analysis. Introduction to time series analysis, ARMA models. Spectral analysis.

209. Case Studies Project for Operations Research

(2-4) Staff

Prerequisite: students must have completed at least 28 units toward their master's degree.

Real life problems will be analyzed by standard operations research methods. A model will be formulated, and relevant data collected and analyzed mathematically and computationally. A written report on the project must be submitted to complete the master's requirements.

213A-B-C. Probability Theory

(4-4-4) Staff

Prerequisites: PSTAT 120 A-B-C and consent of instructor. Students are advised to complete Mathematics 118A-B-C in preparation for this course.

Foundations of probability, distribution functions, characteristic functions, stochastic processes, central limit problem, martingales, stationary processes.

214A-B-C. Introduction to Stochastic Processes

(4-4-4) Staff

Prerequisites: PSTAT 120A-B-C or consent of instructor. Students are advised to complete mathematics 118A-B-C in preparation for this course.

Random walks, renewal theory, Markov processes, branching processes, information theory.

215A-B-C. Statistical Decision Theory

(4-4-4) Staff

Prerequisites: PSTAT 120A-B-C and consent of instructor.

A basic introductory mathematical statistics course in which statistical concepts and procedures are developed and examined from the point of view of game theory, optimization, and decision theory.

216A-B-C. Multivariate Analysis

(4-4-4) Staff

Prerequisites: PSTAT 120A-B-C and Mathematics 108A-B.

Statistical theory associated with the multivariate normal, Wishart and related distributions, partial and multiple correlation, principal components. Hotelling's T^2 -statistic, multivariate linear models, classification and discriminant analysis. Other topics may include invariance, admissibility, minimax, James-Stein estimates, multivariate probability inequalities, majorization, and Schur functions.

217A-B-C. Design of Experiments

(4-4-4) Staff

Prerequisites: PSTAT 120A-B-C and Mathematics 108A-B, or consent of instructor.

Linear models and the analysis of variance; regression and least squares theory; contingency table analysis; method of steepest ascent; ridge regression.

219. Statistics of Life Testing and Reliability

(4) Staff

Prerequisites: PSTAT 120A-B-C and 160A-B or consent of instructor.

Will discuss probability failure models and associated test procedures. Topics will include: parametric and nonparametric life-testing procedures, estimation of hazard rates, component and system reliability, maintenance policies, and renewal theory.

220A-B-C. Advanced Statistical Methods

(4-4-4) Staff

Prerequisites: PSTAT 120A-B-C or consent of instructor for 220A; PSTAT 120A-B-C and 220A or consent of instructor for 220B-C.

General linear models; regression; ANOVA with missing observations; analysis of covariance; multivariate statistical methods; classification and discrimination; clustering and multidimensional scaling, categorical data analysis and log-linear models; model selection and validation, robust fits, inspection of residuals, bio-assay, survival curves.

221A-B-C. Advanced Probability Theory

(4-4-4) Staff

Prerequisites: PSTAT 213A-B-C.

Infinitely divisible distributions, renewal theorems, martingale theory, weak and strong laws of large numbers, weak convergence, central limit theorems, random walks.

222A-B-C. Advanced Stochastic Processes

(4-4-4) Staff

Prerequisites: PSTAT 214A-B-C.

Point processes, Markov processes with discrete and continuous parameters, martingales, stationary processes, Brownian motion, diffusion theory, potential theory, stochastic differential equations.

230. Seminar and Projects in Statistical Consulting

(4-8) Staff

Prerequisites: PSTAT 220A-B-C which may be taken concurrently.

Students participate in the discussions and consulting projects in the statistical laboratory. They are assigned project(s) to work on, and write a report on statistical aspects of the project.

233A-B-C. Introduction to Statistical Methods

(4-4-4) Staff

Not open to Mathematics majors. Students who have had PSTAT 33 cannot receive credit for PSTAT 233A, but may be admitted into PSTAT 233B or 233C with the consent of instructor. Students will attend the same lectures as for

PSTAT 133A-B-C, but will have different discussion classes and laboratories. They will be expected to complete advanced problem assignments.

This course will consider basic ideas in probability and cover important topics in statistical methods with the minimum use of calculus; it will rely on the use of personal computers. Topics: probability, random variables and distributions, expectation and variance, binomial, normal, and other probability models. Statistical tests, correlation and regression. Elementary design of experiments, analysis of variance, sampling and nonparametric statistics.

255. Group Testing

(4) Staff

Prerequisites: PSTAT 120A-B-C or equivalent.

The study of algorithmic search procedures for finding rare items when a single test on a large number of items only determines existence or nonexistence of such rare items. Sequential search strategies.

262AA-ZZ. Seminars in Probability and Statistics

(1-6) Staff

Prerequisites: PSTAT 120A-B-C and consent of instructor. May be repeated for credit.

Topics of current research interest in probability and/or statistics, by means of lectures and informal conferences with members of staff.

500. Teaching Assistant Practicum

(1-4) Staff

Prerequisite: appointment as teaching assistant. No unit credit allowed toward advanced degree. Supervised teaching of undergraduate probability and statistics courses.

501. Teaching Assistant Training

(1-2)

Prerequisite: appointment as teaching assistant. No unit credit allowed toward advanced degree. Consideration of ideas about the process of learning mathematics and discussion of approaches to teaching.

502. Teaching Associate Practicum

(1-5) Staff

Prerequisite: appointment as associate. No unit credit allowed toward advanced degree. Supervised teaching of undergraduate courses.

510. Readings for Area Examinations

(2-6) Staff

*Prerequisite: enrollment in M.A. or Ph.D. program.***511. Foreign Language Training for Mathematical Research**

(2-4) Staff

*Prerequisite: enrollment in Ph.D. program.***596AA-ZZ. Directed Reading and Research**

(1-6)

Prerequisites: graduate standing and consent of instructor. May be repeated for credit as determined by the department chair up to half the graduate units required for the M.A. degree.

598AA-ZZ. Master's Thesis Research and Preparation

(1-6)

Only for research underlying the thesis, writing the thesis. Instructor should be the chair of the student's thesis committee.

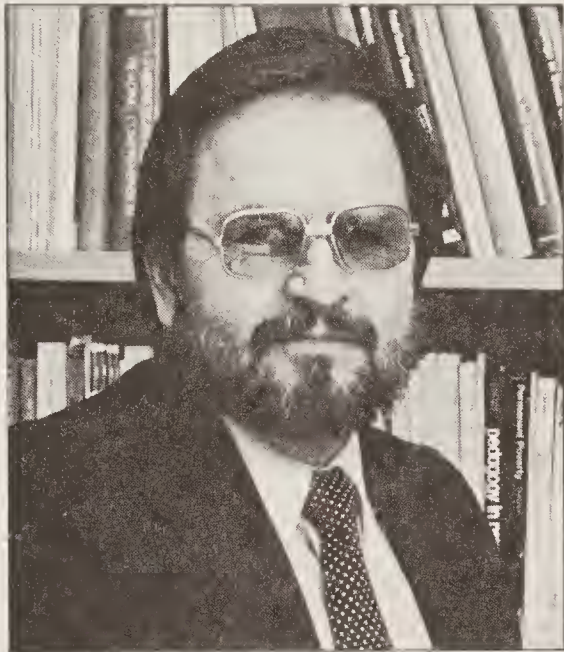
599AA-ZZ. Ph.D. Dissertation Preparation

(1-6)

Prerequisites: graduate standing and consent of instructor. Maximum of 12 units total.

Graduate School of Education

Graduate School of Education, Phelps Hall 1190
 Academic Adviser, (805) 961-2137; Credential Adviser, (805) 961-2036
 Dean: Naftaly S. Glasman
 Assistant Dean: Priscilla A. Drum
 Chair, Department of Education: Lawrence J. Hubert
 Vice Chair, Department of Education: Donald R. Atkinson
 Head, Department of Teacher Education: Richard Jamgochian



My studies have focused on the adaptation of linguistic minorities to school and their cognitive development. I am intrigued by the resilience of culturally and linguistically different children. Many of them come to this country after going through incredible traumas and personal tragedies. They do not know English or our educational system at all. And yet, within a few years many of these children achieve at the level of their mainstream peers.

Some children, however, unable to participate in school activities, develop psychological blocks and show gradual deterioration in their academic ability. I have a special interest in showing teachers how to work with these difficult cases and in training students how to use qualitative (primarily ethnographic) research methods in working in the schools.

I am currently Interim Director for the Linguistic Minority Research Project, an organization that provides a link between researchers from many disciplines and school personnel involved in the education of linguistic minorities. While learning is a natural process, learning through a different language implies a profound change in the organization of ideas and values. The difficulties in learning faced by minority students have serious and long-term consequences for this country's ability to maintain its technological, economic, and political position in the world. Minority education is a concern of all of us.

Henry T. Trueba
 Professor
 Graduate School of Education

The Graduate School of Education offers a variety of programs for prospective teachers, teachers, other educational leaders, and educational researchers. About three fourths of the current student body are enrolled in programs that lead to degrees of Doctor of Philosophy or Master of Arts. About one fourth of the students are preparing for California teaching credentials at the elementary and secondary school levels. A number of students pursue the M.A. or Ph.D. degree in conjunction with qualifying for an advanced specialist or service credential in such areas as bilingual education, school counseling, school psychology, administrative service, reading, and special education. A complete list of degrees and programs offered in the Graduate School of Education appears in the first chapter. (See "The University of California, Santa Barbara.")

In each of the concentrations and emphases, students will find program advisers who counsel on requirements and associated details. The academic adviser offers assistance to all master's and doctoral candidates; the credential adviser assists all credential candidates. Candidates who are pursuing both a credential and an advanced degree will need to consult with both the academic adviser and the credential adviser.

◀ An anthropologist by training, Dr. Trueba is currently director of the Crosscultural Studies Program and director of the Office for Research on Educational Equity at UCSB. He published two books in 1987: *Success or Failure. Linguistic Minority Children at Home and in School* and *Becoming Literate in English as a Second Language: Advances in Research and Theory*. In 1986 he received a Distinguished Scholarship Award from the American Educational Research Association for his research on linguistic minorities.

A pre-credential advising meeting for prospective elementary and secondary teachers is held weekly in Phelps Hall. Students interested in teaching are urged to attend this weekly meeting or to schedule an appointment with the credential adviser.

Research and training facilities. Graduate research opportunities are provided by means of on-campus facilities such as the Reading Clinic, the Parent-Child Development Center, the Counseling Psychology Training Clinic, and the Educational Research Center. Other research opportunities exist in the Special Education Research Laboratory, Offices of Cognitive Research and Educational Equity, as well as in other research areas in the fields of learning, teaching, and educational leadership. In addition, multimedia resources and hardware, including video equipment, are available for research and training in teacher education.

Honorary society in education. The Alpha Rho chapter of Kappa Delta Pi, national honorary society for men and women in education, is located on the campus and conducts a variety of activities in the Southern California educational community.

MASTER'S DEGREE PROGRAMS

Three master's degree programs are offered in the Graduate School of Education:

- **Master of Arts — Education**
- **Master of Arts — Counseling Psychology**
- **Master of Education**

The purpose of the master's degree programs is to add to the competence of experienced elementary or secondary school teachers and other educational leaders in academic as well as pedagogical or research skills. Previous teaching experience is not required for every program.

Within a general program, candidates must select a specific area of emphasis or concentration. The Master of Arts in Education degree is available for concentrations in cross-cultural education, confluent approaches to education and/or organizations, early childhood education, educational policy and organization, educational psychology, instruction, international education, reading and language development and special education. A Master of Arts in Counseling Psychology is also offered.

Three programs — Confluent Education, Counseling Psychology, and Special Education — offer the M.Ed. in addition to the M.A. The M.Ed. is intended for practitioners who desire advanced work but do not plan to pursue a research degree. Please consult the *Graduate School of Education Bulletin* for specific information.

In addition, master's degree students admitted in counseling psychology may, by petition, be admitted to special programs in college student personnel counseling and marriage, family, and child counseling. Students who complete these two programs receive a UCSB Certificate of Completion of Graduate Curriculum.

Prerequisites to the programs. Candidates must hold a bachelor's degree or its equivalent from an accredited institution and must satisfy the requirements of the Graduate Division. Some programs require possession of a California teaching credential or its equivalent, and some require teaching or other appropriate experience. The academic adviser will provide information about specific program requirements.

Admission to the programs. Applications are available from the Graduate School of Education and are to be returned to the academic adviser. Applications will be considered up to the cutoff date established by the Graduate Division (May 1 for fall quarter), except for counseling psychology, which has a cutoff date of February 15. Applicants

who wish to be considered for fellowships must file completed applications before January 31.

Degree requirements. Candidates and their advisers construct a total program acceptable to both. Candidates are expected to take a final comprehensive examination or to complete a thesis requirement at the conclusion of the master's degree program. There is no blanket language requirement for all candidates. When advisers deem it suitable for a candidate's field of study, they will require an appropriate degree of competency in one foreign language.

Admission to the M.A. and Ph.D. programs in education is as follows:

ALL QUARTERS

Crosscultural Education
Early Childhood Education
Educational Psychology
International Education
Special Education (M.A., Ph.D.)

SUMMER OR FALL ONLY

Counseling Psychology
Educational Policy and Organization
Reading

FALL ONLY

Confluent Education
Instruction

FALL OR WINTER ONLY

Special Education (M. Ed.)

APPLICATION DEADLINES

Summer and Fall — May 1
(except Counseling Psychology — February 15)
Winter — November 1
Spring — February 1

Application files must be *complete* by stated deadlines.

DOCTORAL PROGRAMS

Two Ph.D. programs are offered in the Graduate School of Education:

- **Doctor of Philosophy — Education**
- **Doctor of Philosophy — Counseling Psychology**

The purpose of the Ph.D. programs is to prepare highly capable individuals to perform as scholars and skilled professionals in their chosen fields. The general areas in which doctoral candidates can be accepted are confluent approaches to education and/or organizations, counseling psychology, educational policy and organization, educational psychology, international education, and special education. Doctoral work in early

childhood education and in language development and reading may be pursued as part of the concentration in educational psychology.

Admission to the programs.

Applications are available from the Graduate School of Education and must be returned to the academic adviser. Applicants must fulfill the general requirements for admission to graduate status, and they must submit a report of performance on at least one of two tests, the Miller Analogies or the Graduate Record Examination.

In addition, the student is required to present a description of the proposed doctoral study. Additional information may be requested from applicants. Only applicants whose records suggest clear potential for success will be accepted into the program.

Applications will be considered up to the cutoff date established by the Graduate Division (May 1 for fall quarter), except for counseling psychology, which has a cutoff date of February 15.

Degree requirements. Detailed information regarding advanced degrees is provided in the *Graduate School of Education Announcement* and in the *Graduate Division Announcement*. No specific total number of course units is prescribed. If a student needs skill in one or more foreign languages in order to pursue a special field of study most effectively, such requirements will become part of the study program. There is, however, no general foreign language requirement that every candidate must fulfill.

Residence requirement. Minimum residence requirement for the Ph.D. degree is two years. Students in doctoral programs will spend at least six quarters in residence pursuing a program of full-time study and research; three consecutive quarters of this residence must be completed in regular sessions before advancement to candidacy. Exceptions to this rule may be granted only by the Graduate Council.

CREDENTIAL PROGRAMS/ CERTIFICATE PROGRAMS

The Graduate School of Education offers programs leading to recommendation for the following credentials:

Teaching Credentials

- Multiple Subject (elementary), including Bilingual Cross-Cultural Emphasis (Spanish)
- Single Subject (secondary), including Art, English, Foreign Language (German, Spanish, French), Life Science, Mathematics, Music, Physical Science, and Social Science

Service Credentials

- Administrative
- Pupil Personnel, including School Counselor, School Psychologist

Specialist Credentials

- Bilingual Cross-Cultural (Spanish)
- Reading
- Special Education, including Learning Handicapped and Severely Handicapped

By California law, all full teaching credentials require a minimum of one year of graduate work. An undergraduate student seeking a teaching credential from UCSB normally will enter an undergraduate program to complete work for a baccalaureate degree before applying for admission to a teaching credential program. UCSB offers a large number of undergraduate majors that are appropriate preparation for teaching at the elementary and secondary school levels.

The teaching credential programs at UCSB consist of a year-long sequence of professional courses in the Graduate School of Education, integrated with field experience in local schools. This professional preparation occurs during a post-baccalaureate year. In addition to meeting the usual university standards of scholarship, candidates must clearly demonstrate their teaching aptitude.

A student who expects to seek a credential should consult as soon as possible with an adviser in the Graduate School of Education. Further information, including full details of admission and program requirements and the content of the teaching credential programs, is contained in the *Graduate School of Education Announcement*, available from the credential adviser, Graduate School of Education.

All post-baccalaureate candidates for teaching credentials must be admitted to the Graduate Division and are subject to the following requirements:

Admission. Multiple Subject and Single Subject Credential Programs begin only in the fall quarter of each academic year. Applications for admission to graduate standing must be filed with the Graduate School of Education far in advance of the March 1 deadline, with complete transcripts, letters of recommendation, and application fee. March 1 is an administrative deadline, and the programs in education might be filled in advance of that date. Candidates are advised to apply well in advance and to contact advisers in education for special requirements.

Applications for admission to all credential programs must be reviewed by the Graduate School of Education. The final decision for admission is made by the Dean of the Graduate Division, on the recommendation of the Dean of the Graduate School of Education. Academic requirements for admission into teaching credential programs are similar to those for admission into advanced degree programs. Consideration is given to evidence of potential for success in teaching.

Prerequisites: Prerequisites for admission to the Multiple Subject and Single Subject Teaching Credential Programs at UCSB include English 106, Education 109, Education 125 (Social Foundations of Education), and Education 175 (Contemporary Special Education), with the exception that English 106 is not required for the Single Subject program in English. In addition, Mathematics 100A-B is required for the Multiple Subject Teaching Credential Program. All prerequisites must be completed with a grade of C or better. Students are encouraged to complete the appropriate Single Subject Waiver Program, or the Diversified Program, if applying to the Multiple Subject Program, or to pass the appropriate National Teachers Examination (NTE). Students are also expected to have prior experience with children or young adults in a teaching setting. Applicants who complete the baccalaureate at other institutions must have substantially the same general educational background and preparation in a major teaching field as required at UCSB. Deficiencies must be removed prior to admission to student teaching.

CBEST. Candidates for the Multiple Subject and Single Subject Teaching Credentials are required to attain passing test scores on the California

Basic Education Skills Test before the California credential can be awarded. Future teachers must take this test prior to the beginning of the credential year.

U.S. Constitution. A course (three quarter-units) or approved examination that covers the provisions and principles of the Constitution of the United States is also required. At UCSB, Political Science 12 or Political Science 100 fulfill this requirement. Appropriate equivalent course work may be submitted for approval to the Education Advising Office.

Scholarship. Students who are admitted to credential programs must maintain a grade-point average of at least 3.0 (B) in all upper-division and graduate courses. A student who fails to maintain this average is subject to dismissal from the credential program.

Residence. Students in teaching credential programs are required to spend three quarters enrolled in regular session at UCSB. Programs begin in the fall quarter only.

Multiple Subject Teaching Credential. The Multiple Subject Teaching Credential requires verification of subject-matter competency in the subjects taught at the elementary level. This is achieved by completion as an undergraduate of the Diversified Program at UCSB, or by completion of a similar Liberal Studies Waiver Program at another California institution, or by attainment of passing scores on the General Knowledge NTE.

Combined Credential with M.A. in Special Education. Selected students may undertake a two-year program that will lead to a Multiple Subject credential and an M.A. and Special Education credential. Consult advisers in education or special education.

Single Subject Teaching Credential. The Single Subject Teaching Credential requires verification of subject-matter competency in the teaching field. This is achieved by completion as an undergraduate of a Single Subject Waiver Program in the chosen teaching field or by attainment of passing NTE scores in the subject to be taught.

For more complete information about all credential programs, see the *Graduate School of Education Announcement*. For information about the Clinical Rehabilitative Services

Credential in Language, Speech, and Hearing and about the Educational Audiologist Credential, consult the Department of Speech.

Education

Faculty

Donald R. Atkinson, Ph.D., University of Wisconsin, Madison, Professor (*counseling psychology*)
 James H. Block, Ph.D., University of Chicago, Associate Professor (*educational psychology*)
 Norman J. Boyan, Ed.D., Harvard University, Professor (*educational administration and policy*)
 George I. Brown, Ed.D., Harvard University, Professor (*confluent education*)
 J. Manuel Casas, Ph.D., Stanford University, Associate Professor (*counseling psychology*)
 Willis D. Copeland, Ph.D., University of Notre Dame, Associate Professor (*instruction*)
 John W. Cotton, Ph.D., Indiana University, Professor (*educational psychology, psychology*)
 Concha Delgado-Gaitan, Ph.D., Stanford University, Assistant Professor (*bilingual and crosscultural education*)
 Carol N. Dixon, Ph.D., University of Delaware, Lecturer with Security of Employment (*reading*)
 Priscilla A. Drum, Ph.D., Stanford University, Associate Professor (*educational psychology, language development and reading*)
 Richard P. Duran, Ph.D., UC Berkeley, Associate Professor (*educational psychology*)
 Louise F. Fitzgerald, Ph.D., Ohio State University, Assistant Professor (*counseling psychology*)
 Noah E. Friedkin, Ph.D., University of Chicago, Associate Professor (*educational administration and policy, sociology*)
 Michael M. Gerber, Ph.D., University of Virginia, Charlottesville, Associate Professor (*special education*)
 Naftaly S. Glasman, Ph.D., UC Berkeley, Professor (*educational administration and policy, political science*)
 Susan R. Goldman, Ph.D., University of Pittsburgh, Associate Professor (*educational psychology, psychology*)
 Gail Hackett, Ph.D., Pennsylvania State University, Associate Professor (*counseling psychology*)
 Thomas G. Haring, Ph.D., San Francisco State University and UC Berkeley, Assistant Professor (*special education*)
 Lawrence J. Hubert, Ph.D., Stanford University, Professor (*educational psychology and statistics*)
 Laurence Iannaccone, Ed.D., Teachers College, Columbia University, Professor (*educational administration and policy, confluent education*)
 Richard Jamgochian, Ph.D., University of Chicago, Senior Lecturer with Security of Employment (*social foundations, teacher education*)
 Michael J. Mahoney, Ph.D., Stanford University, Professor (*counseling psychology*)
 Ernest D. Michael, Ph.D., University of Illinois, Professor (*health education*)
 Gale Morrison, Ph.D., UC Riverside, Associate Professor (*counseling psychology*)

James W. Pellegrino, Ph.D., University of Colorado, Professor (*educational psychology, psychology*)
 Russell W. Rumberger, Ph.D., Stanford University, Associate Professor (*educational administration*)
 Guadalupe San Miguel, Jr., Ph.D., Stanford University, Associate Professor (*bilingual and crosscultural education, Chicano studies*)
 Melvyn I. Semmel, Ed.D., Peabody College, Vanderbilt University, Professor (*special education*)
 Stewart B. Shapiro, Ph.D., University of Southern California, Professor (*confluent education*)
 R. Murray Thomas, Ph.D., Stanford University, Professor (*educational psychology, international education*)
 Henry T. Trueba, Ph.D., University of Pittsburgh, Professor (*bilingual and crosscultural education*)
 Jules M. Zimmer, Ed.D., Arizona State University, Professor (*educational psychology, early childhood education*)

Professors Emeriti

Glen W. Durlinger, Ed.D.
 Chester W. Harris, Ph.D.
 Elizabeth H. Irish, Ed.D.
 Charles L. Jacobs, Ph.D.
 Ralph K. Nair, Ed.D.
 Elsie A. Pond, M.A.
 Kermit A. Seefeld, Ed.D.
 John A. R. Wilson, Ed.D.

EDUCATION COURSES

UPPER DIVISION

109. Health in the Twentieth Century

(3) Staff

Prerequisite: junior or senior standing required.
 Study of communicable diseases, epidemiology, nutrition, cardiorespiratory diseases, aging, health and development of the adolescent, pharmacology, drugs (alcohol, tobacco, narcotics), health care, and consumer protection. Includes the nature and scope of health education as provided in the *Framework for Health Instruction in California Public Schools*.

121. Techniques of Field Observation in School Settings

(2) Staff

Prerequisites: prior experience in working with elementary or secondary ages in school settings with pre-professional volunteer track for at least one quarter. Junior or senior standing required. Consent of instructor.
 Consideration of methods for observation and interpretation of teaching/learning behaviors in elementary and secondary classrooms. Emphasis will be placed on utilizing observational techniques to develop an integrated knowledge of classroom phenomena.

122. Practicum in Field Observation in School Settings

(1) Jamgochian

Prerequisites: Enrollment in or completion of Education 121. Course may be taken three times for one unit per quarter with the provision it has been taken once with Education 121. Junior or senior standing required.
 This course provides undergraduate students an opportunity to experience the real world of teaching, to examine themselves in the role of potential

teacher, to develop first hand knowledge of the school environment, and to render service.

125. Social Foundations of Education

(3) Staff

Prerequisites: upper-division standing/pre-professional experience. Not open to students who have received credit for Sociology 164.
 A study of the relationship between school and society. Social and political influences on education historically and currently will be examined. Schools as complex organizations with unique roles will be studied.

164. Introduction to Educational and Vocational Guidance

(3) Staff

Prerequisite: upper-division standing or consent of instructor.
 An overview of the theories and concepts involved in career decision-making. Develop working knowledge of career information and field survey techniques for understanding the job market in relation to economic trends.

165. Introduction to Counseling Psychology

(3-4) Staff

Prerequisite: junior standing.
 This course is designed for those considering or beginning counseling psychology as a career. The scientific and clinical aspects of the field, along with the historical development and new directions in counseling psychology, will be covered.

175. Contemporary Special Education

(4) Staff

Prerequisite: junior or senior standing required.
 A course in special education for undergraduate students and other non-majors covering the nature and needs of the handicapped pupil, special education programs and methods, contemporary social, legal, and educational issues.

176. Practicum in Special Education

(2-4) D. Semmel

Prerequisites: upper-division standing, and enrollment in or completion of Education 175. May be repeated for a maximum of 12 units.
 This course provides students with an opportunity for direct and guided experience in programs for the handicapped. Students are placed in public school and private agency programs in the community. Seminars emphasize special education service delivery systems and professional roles and careers in the field.

199. Independent Studies

(1-5) Staff

Prerequisites: students must 1) have attained upper-division standing; 2) have a minimum 3.0 grade-point average for the preceding three quarters; 3) have completed at least two upper-division courses in education. Students are limited to five units per quarter and 30 units total in all 198/199 courses combined. Open only to advanced students approved by the department chair.
 Study of special problems in various fields of education.

GRADUATE COURSES

200. Research Methods in Education

(4) Cotton, Drum

Prerequisite: Education 114, 213, or equivalent.
 Basic principles of scientific method exemplified by experimental, survey, longitudinal, and correlational studies; design and reporting of original investigations; bibliographic experience.

201. Seminar: Models, Processes, and Inquiry Modes in Research

(4) Staff

Prerequisite: consent of instructor.

An introduction to disciplined scientific inquiry; appropriate for all students interested in original research. Examines philosophical basis of knowledge, structure of science, and application. Special focus on theory and theory testing, theory building.

202A. Language Structures, Processes, and Development

(4) Drum, Goldman

Prerequisite: admission to Ph.D. program or consent of instructor.

Theoretical and empirical accounts of how language is structured and processed are covered. Major approaches to understanding the processes that govern comprehension and production of words, sentences, and texts are reviewed. In each area, developmental patterns are discussed. Metalinguistic skills and second language learning research are also covered.

202B. Learning to Read and Learning from Reading

(4) Drum, Goldman

Prerequisite: consent of instructor.

Research on acquisition of literacy and content learning in schools is examined from an information processing analyses of texts, characteristics of instruction, and individual differences within the learner.

203A. Foundations of Education

(3) Staff

The application of psychological principles to the educative process, personality, and assessment. Other topics include discipline, design of instruction, and adolescent behavior and development.

203BX. Foundations of Education

(3) Staff

An overview of the social context of education that directly affects schooling and its outcome, this course focuses upon the character of society and the influence of societal beliefs and practices on schools. (Offered summer session only.)

203C. Foundations of Education

(3) Staff

A course designed to help teachers examine those patterns of thought, feeling, and action which interfere with effective teaching. Non-productive learning patterns are also studied, and alternatives created.

204. Research and Measurement in Reading and Language

(4) Drum

Focus on learning to critically review reading and language research studies and the instruments used in measuring performance.

205. Comparative Education

(4) Thomas

Analysis of the role of education in developing nations; a study of educational problems and attempted solutions in societies of Asia, Africa, Central and South America, and the Pacific Islands.

206. Seminar in Reading and Language Research

(4) Drum, Goldman

Prerequisite: consent of instructor. May be taken more than once with consent of instructor.

Students will develop and critique research instruments, materials, and designs for projected language and reading research studies. Issues in design and analysis are discussed. Working seminar format.

207. Sociolinguistics in the Classroom

(4) Goldman, Duran

Prerequisite: admission to M.A. or Ph.D. program or consent of instructor.

Aspects of language as it functions in instructional contexts. Topics covered include conversational analysis, nonverbal communication, direction following, children's understanding and use of language in social situations, functions of oral and written language, and sociocultural effects on communication styles.

208. History of Minority Education in the United States

(4) San Miguel

Prerequisite: consent of instructor.

Offers a historical overview of minority education in our public schools with emphasis on urban multiethnic student populations and their struggle for educational equity. A research paper is required.

209A. Theories of Child Development

(4) Goldman, Thomas, Zimmer

Prerequisite: consent of instructor.

Survey of general issues in development and approaches to the study of child development, including the learning theory, normative, information processing, and Piagetian viewpoints. Analysis covers characteristics, underlying assumptions, and research evidence that bears upon the likely validity of the theories.

209B. Cognitive and Social Development

(4) Goldman

Prerequisite: consent of instructor.

Survey course in topics in cognitive and social development from infancy to preadolescence. Theoretical and empirical perspectives frame the consideration of a variety of cognitive and social issues. Topics include reasoning, memory, problem solving, number concepts, social behavior, self-understanding, emotions, and socialization. Instructional implications are discussed.

209D. Human Development and Education

(4) Thomas

Prerequisite: consent of instructor.

Concepts and theories of development as they apply to understanding the educability of children and adults. The assumptions about development that underlie various educational practices.

209E. Seminar in Topics in Development

(4) Goldman, Thomas, Zimmer

Prerequisite: consent of instructor. May be taken more than once with consent of instructor.

In-depth consideration of theoretical and empirical issues concerning specific topics in cognitive and/or social development. Specific focus determined by instructor each time course offered.

210A. Human Memory and Cognitive Processes

(4) Pellegrino

Survey of theoretical approaches and empirical findings in the areas of learning, memory, psycholinguistics, and cognitive processing. Topics include structure and process models of memory, nature of the information-processing approach, and related experimental methodology and findings.

210B. Research and Theory in Cognition

(4-4) Pellegrino

Prerequisite: consent of instructor.

Survey of major approaches to the study of human cognition. Includes theories and data on learning, memory, and information processing, including the structure and processing of language.

210C. Acquisition of Problem Solving Skills

(4) Duran

Prerequisite: consent of instructor.

Cognitive process models of learning and problem solving skills acquisition. Higher order language and thinking processes and reasoning from incomplete knowledge. Inductive thinking and creative problem solving.

210D. Seminar in Topics in Language and Test Processing

(4) Drum, Goldman

Prerequisite: consent of instructor. May be taken more than once with approval of instructor.

In-depth consideration of specific topics in language, reading, and text linguistics. Specific focus determined by instructor each time course offered.

211. Psychological Foundations of Education in the Elementary School

(3) Thomas

Prerequisites: graduate standing and consent of instructor.

Interdisciplinary approaches to theory and research on student behavior.

211C. Critical Incidents in Life-Span Development

(3) Staff

Prerequisite: consent of instructor.

The course enhances the student's ability to (1) identify incidents at various stages in people's lives that disrupt desirable development and (2) propose methods of aiding such people in solving the problems that these incidents entail.

212A. Organizational Development: Introduction to Open Systems Theory

(4) Shapiro

Prerequisite: consent of instructor.

Social-psychological assessment of organizations based on "open-systems" framework. Topics include observational, qualitative, and quantitative methods, use of records, documents, survey research methods, and use of psychological instruments on organizational climate, management styles, and interpersonal relations.

212B. Seminar in Organizational Development: Managing Stress and Conflict

(4) Shapiro

Prerequisite: consent of instructor.

Social-psychological analysis of causes and control of stress and conflict throughout organizations in the context of "open-systems" theory. Topics include collaborative techniques and other models for effectively managing organizational stress and conflict.

213. Introductory Educational Statistics

(4) Friedkin

Prerequisite: college algebra or consent of instructor. Not open for credit to students who have completed Education 114.

Introduction to statistical concepts and methods for the collection, analysis, interpretation, and presentation of data. Elements of sampling, simple techniques for analysis of means, proportions, and linear association are covered.

214A. Advanced Educational Statistics

(4) Hubert, Duran

Prerequisite: college algebra or consent of instructor.

Measures of central tendency and variability. Sets, spaces, and random variables. Introduction to estimation theory and hypothesis testing. Binomial, normal, t, and chi-square distributions. Bivariate normal distribution.

214B. Advanced Educational Statistics

(4) Hubert, Duran

Prerequisite: Education 214A.

This course will deal with the following topics: review of interval estimation and hypothesis testing; one-way fixed analysis of variance; two-way fixed effects analysis of variance; principles of fixed-effect design; bivariate distributions, simple correlation, and simple regression; and binomial distributions.

214C. Advanced Educational Statistics

(4) Hubert, Duran

Prerequisite: Education 214B.

This course will deal with the following topics: random and mixed anova designs, repeated measures anova designs, nonparametric procedures, analysis of covariance (in relation to randomized block designs), and multiple regression and correlation.

215A-B. Psychometrics

(4-4) Duran, Hubert

Prerequisite: Education 214C or equivalent, or consent of instructor.

The two course sequence introduces students to formal mathematical and statistical models of tests and test item characteristics. Topics covered include: classical true-score theory, reliability and validity, test construction techniques, equating and scaling of tests, latent-trait models, and methods for assessing test and item bias.

216A-B-C. Introduction to Multivariate Statistics in Education

(4-4-4) Hubert

Prerequisites: Education 214A-B.

Advanced statistics devoted to multi-variate distribution theory and analysis: multivariate analysis of variance, discriminant analysis, and canonical correlation. A review of the necessary matrix algebra will be included.

217A. Beginning Gestalt Theory and Practice

(3) Brown

Prerequisite: consent of instructor.

An introduction to the theory and principles of Gestalt Therapy as applied to education and other human resource areas.

217B. Advanced Gestalt Theory and Practice

(3) Brown

Prerequisites: Education 217A and 217D.

Advanced training in Gestalt with an emphasis on current theoretical, methodological and clinical developments as they apply to education and other human resource areas.

217C. Organizational Leadership: A Gestalt Perspective

(4) Brown

Prerequisite: consent of instructor.

The application of the principles of Gestalt therapy as both a learning and interpersonal process to leadership behavior in institutions and organizations.

217D. Beginning Gestalt Laboratory

(2) Brown

Prerequisite: consent of instructor.

Demonstration of and training in basic skills of Gestalt Therapy with applications to other than therapeutic contexts.

217E. Advanced Gestalt Laboratory

(2) Brown

Prerequisites: Education 217A and 217D.

Demonstration of and training in advanced skills of Gestalt Therapy with application to other than therapeutic contexts.

218A-B-C. Professional Issues in Counseling Psychology

(1-1-1) Atkinson, Mahoney

Prerequisite: consent of instructor.

This three-course sequence examines current professional issues in counseling psychology including professional identification, legal and ethical standards, child abuse assessment and reporting, and substance abuse detection and treatment.

219A. Testing Students

(4) Block

An introduction to student testing theory and practice. Covers the criteria of a good test: validity, reliability, objectivity, utility; schools of testing: measurement, evaluation, and assessment; and norm and criterion referenced testing.

219B. Teaching Students

(4) Block

Introduction to contemporary instructional research. Process-product, process-process, and context-process research are reviewed and applied to research on teacher-training and effective schooling.

219C. Motivating Students

(4) Block

An exploration of contemporary school motivation theory. Emphasis is placed on modern cognitive and effective theories of intrinsic motivation: attribution, ability, achievement, self-worth, flow, and self-determination.

220. Social Networks

(4) Friedkin

This course is based on Harary, Norman, and Cartwright's classic text, *Structural Models*. Social network concepts are introduced in tandem with FORTRAN programming skills necessary to operationalize them. No previous experience with computer programming is required. Approximately half the course is devoted to a discussion of recent substantive literature on social networks.

221A-B. Fieldwork Methods in Education

(4-4) Staff

Prerequisites: Education 201 or consent of instructor. Completion of Education 114 prior to completion of 221B.

An introduction to procedures of qualitative research techniques as applied to educational processes and settings. Topics include field relations, data collection and analysis, ethics, and data application. The second term is devoted to fieldwork projects.

222A. Introduction to Exceptional Children

(4) D. Semmel, Gerber

An overview of the historical, social, and legislative foundations of the education of the exceptional pupil. Survey of the range and nature of disabilities requiring special education.

222B. Psychology and Education of Learning Disabled and Behavior Disordered Children

(4) Gerber

Prerequisite: Education 222A or equivalent.

Course surveys definition and classification issues regarding individuals labeled learning disabled, emotionally disturbed, or behavior disordered. Cognitive and behavioral characteristics of individuals presented, analyzed, and discussed. Major attention given to instructional experiments yield valid and functional descriptions of learning difficulty.

222C. Psychology and Education of Mentally Retarded Children

(4) Staff

Prerequisite: Education 222A or equivalent.

This course is designed to study the developmental, cognitive and affective characteristics of mentally retarded children. Special education theory and principles of educational modification for these students are also covered.

222D-E-F. Proseminar: Policy Research Issues in Special Education

(4-4-4) M. Semmel

Prerequisites: Education 222A-B-C or consent of program leader.

Contemporary policy research issues related to referral, assessment, identification, and placement of handicapped children in the schools. Includes review of literature, analysis, construction, and evaluation of variables contributing to least restrictive environments for the handicapped: IEP and instructional paradigms, due process, parent involvement, and personnel development.

222G. Seminar: Advanced Topics in Special Education

(4) M. Semmel

Prerequisite: advanced standing in the M.A. program, the M.Ed. program, or consent of program leader.

Consideration of alternative instructional environments for handicapped pupils, new instructional roles for teachers, and leadership and consultation skills.

222H-I-J. Research Seminar: Policy Research in Special Education

(4-4-4) M. Semmel

Prerequisites: consent of instructor. Open to graduate students in special education and related areas of specialization.

Students are required to propose and conduct research studies on policy issues related to the education of handicapped children in the schools.

223A. Instructional Methods for Learning Handicapped Pupils

(4) D. Semmel

Prerequisite: Education 222A.

Course covers methods of instructional management, classroom organization, curriculum selection and modification, individual education program planning and evaluation.

223B. Instructional Methods and Classroom Management for Handicapped Pupils

(4) Gerber

*Prerequisite: Education 222A. Education 229A is to be taken concurrently with this course.**Fieldwork will be correlated with course content.*

Implementation of individual educational programs, instructional management, selection modification of curriculum, and techniques of behavior management.

223C. Early Childhood Education of the Handicapped Child

(4) Staff

Prerequisite: Education 222A.

Identification, planning, and delivery of special educational interventions for the preschool handicapped child. Includes review of relevant literature and service models.

223D. Issues and Instruction in Critical Life Span Needs

(4) Haring

Prerequisite: consent of instructor.

Contemporary research and programmatic developments in special education towards critical

skills needed throughout life in natural communities. Issues to be discussed include: social integration, advocacy, vocational service design, post secondary programs, deinstitutionalization and critical skills necessary for maximal independent living.

223E. Psycho-Educational Assessment and Evaluation of Handicapped Children
(4) Staff

Prerequisite: consent of instructor.

Methods of psycho-educational assessment and evaluation for identification, planning, placement, and review of progress of handicapped children in the public schools. Includes consideration of screening and diagnostic instruments and procedures, as well as instruments and materials to assure nondiscriminatory assessment.

223F. Special Education for the Bilingual Handicapped Child

(4) Staff

Prerequisites: Education 222B-C or consent of instructor.

Issues in identification and provision of educational services to bilingual handicapped children. Includes consideration of linguistic and cultural differences affecting learning styles of non-English and limited English-speaking handicapped children, as well as sociopolitical legal influences of service delivery systems.

223G. Social Psychology of the Handicapped

(4) Staff

Prerequisite: consent of instructor.

Includes reviews of relevant research on development of social competence in handicapped children, and perceptions, somatopsychology, expectations, and interactions with adults and peers.

223H. Administrative and Legal Issues in Special Education

(4) Gerber

Prerequisites: Education 222B-C or equivalent and consent of instructor

Legal requirements and responsibilities of special education administrators. Includes consideration of resource allocations, provision of procedural safeguards to parents, and initiation of innovations in organizing and administering special education programs in the schools.

223I. Secondary Education of Learning Handicapped Pupils

(4) Staff

Prerequisites: Education 222B-C and consent of instructor.

Topics include adolescent development of the handicapped, educational alternatives, methods, secondary school curriculum, career counseling, and vocational preparation of handicapped youth.

223J. Programs and Services for Severely Handicapped Adults

(4) Haring

Vocational, residential, recreational, and developmental programming for adults, with focus on instructional and program design methods.

223K. Effective Teacher Behavior Seminar and Laboratory

(4) D. Semmel

A laboratory-based seminar on effective teacher behavior. Students review research literature and systematically define, observe, and evaluate specified teacher behavior in the laboratory and in the field.

224A-B-C. Practicum in Developmental Research

(4-4-4) Zimmer, Thomas, Pellegrino

Supervised experience in the conduct and presentation of educational research focusing on developmental issues.

225W-S. Social Foundations of Education

(2-1) Staff

Prerequisites: admission to the Credential Program in Education. Not open to students who have received credit for Sociology 164 or Education 125. Education 225W-S is a two-quarter in-progress course. Both quarters must be completed to receive credit.

A study of the relationship between school and society. Social and political influences on education historically and currently will be examined. Schools as complex organizations with unique roles will be studied.

226A-B-C. Early Childhood Learning and Development

(4-4-4) Zimmer

Prerequisite: admission to Early Childhood Program or consent of instructor.

Course focuses on learning and developmental concepts concerning children from birth to 11 years of age. Theories acquired are placed within a context of home and school. There will be a special emphasis on Piagetian theory.

227. Research Methods in Child Development

(4) Thomas

Prerequisite: Education 114, 213, or equivalent.

Survey and critique of methods of studying children. Includes the completion of a short research project by each class member.

228A. Fieldwork and Current Issues in Early Childhood Education

(4) Zimmer

Prerequisite: admission to Early Childhood Program or consent of instructor.

This course is designed to provide students with a practical, supervised experience in the field of Early Childhood Education. Weekly seminars cover current issues in the field; multicultural education, sexism, child abuse, curriculum planning, peace education, etc.

228B. Fieldwork and Administration of Early Childhood Programs

(4) Zimmer

Prerequisite: admission to Early Childhood Program or consent of instructor.

This course is designed to provide students with a practical, supervised, administrative placement working in an Early Childhood Program. Weekly seminar topics include: administrative styles, program philosophy, budget and funding issues, program planning, staff development and supervision, etc.

228C. Fieldwork and Evaluation of Early Childhood Programs

(4) Zimmer

Prerequisite: admission to Early Childhood Program or consent of instructor.

This course is designed to provide students with a practical, supervised administrative placement working in an Early Childhood Program. Weekly seminar topics emphasize the evaluation of programs based on a Piagetian perspective.

229A. Practicum in Special Classes for Learning Handicapped Pupils

(2-12) D. Semmel

Prerequisite: consent of instructor.

Supervised field-based practicum in instruction and management of special day classes for learning handicapped pupils.

229B. Internship in Special Education

(2-12) Staff

Prerequisites: advanced standing in the doctoral program and consent of program leader.

Field placement in private, local, state, or federal education agency to acquire experience in research and policy formulation on issues related to delivery of educational services to handicapped pupils.

229C. Practicum in Special Education Programs for Severely Handicapped Pupils

(2-12) Haring

Prerequisite: consent of instructor.

Supervised field-based practicum in instruction and management of special education programs for severely handicapped pupils.

229D. Site Visit Practicum in Special Education

(2-4) D. Semmel

The program is designed to acquaint students with the various public school and community agency programs that serve the handicapped. Students visit at least five different programs and volunteer in one of them.

229E. Practicum in Psycho-Educational Assessment of Learning

(2-4) Staff

Development of skills in administration and interpretation of standardized and informal tests. Tests ethics, participation in multidisciplinary assessment also covered.

230. Developmental and Remedial Reading

(4) Dixon

Prerequisite: consent of instructor.

A course for the classroom teacher and the specialized reading teacher, emphasizing practical, innovative techniques in the reading program. Offered summer session only.

231A-B-C-D. Developmental and Remedial Reading Laboratory

(1-4) Dixon

Prerequisite: admission to the M.A. in reading or consent of instructor.

An advanced course in developmental and remedial reading. A practical laboratory experience. Students will learn to implement instructional programs with remedial and developmental reading students.

232A. Reading Diagnosis

(4) Dixon

Prerequisite: consent of instructor.

First course in reading diagnosis. Course emphasizes the selection and implementation of diagnostic practices and prescription in both developmental and remedial reading programs.

232B. Advanced Reading Diagnosis

(4) Dixon

Prerequisite: Education 232A.

Second course in reading diagnosis and prescription intended for the person organizing and implementing developmental and remedial programs in the schools.

233W-S. The Roles of a Reading Specialist

(2-2) Dixon

Prerequisites: consent of instructor. Education 233W-S is a two-quarter sequence course; both quarters must be taken to receive credit.

Seminar discussions examine (among others) roles of reading specialists as curriculum designer, program evaluator, change agent, and proposal writer. Major project will involve evaluation of a schoolwide reading program.

234. Linguistics for Teachers

(4) Drum, Goldman

Linguistic theory and its applications to the teaching of language and reading skills. The course will survey topics in phonetics, syntax, semantics, and pragmatics.

235. Contemporary Critics and Reform Movements in Education

(4) Staff

Prerequisite: consent of instructor.

Seminar focuses on basic dimensions of reform and their applicability to education. The evolution of reform in education and its current status are addressed. Particular emphasis is given to "new left" proposals for reform.

236. "Youth" and Youth Policy in American Education

(4) Staff

Prerequisite: consent of instructor.

Seminar addresses the changing conceptions of youth and the effect of these views on educational policy. The seminar is interdisciplinary in focus, and relates historical, sociological, and psychological literature to the institutional arrangements within which youth grow up.

237A. Labor Relations

(4) Boyan

Prerequisite: consent of instructor.

Introductory study of legal and substantive issues, cases, problems in negotiations, dispute settlement techniques, and private and public sector comparison.

237B. Labor Relations

(4) Boyan

Prerequisite: Education 237A or consent of instructor.

Specific issues in labor relations are examined, and the underlying policy considerations are analyzed.

238. Children's Literature

(4) Dixon

Prerequisite: consent of instructor.

Topics include the development of tastes and interests, values and attitudes; standards for the creating of children's literature; bibliotherapy — the problems approach; individualized reading — balancing the diet; interrelationships with total curriculum; experimenting with children's literature. Offered summer session only.

239. School Law

(4) Staff

The history of school law including significant cases will be reviewed along with a study of the Education, Administrative, Welfare, Institutional, and other relevant codes. Opinions of the Courts, Attorney General, and County Counsel will also be studied.

240A. Educational Purpose and Policy Choice

(4) Boyan

Prerequisite: consent of instructor

A systematic examination of the sources and processes of policy formation and choice in and for educational institutions, including connection with continuities and discontinuities in educational purposes. Public and private sector influences on setting purpose and forming policy receive special attention.

240B. Educational Purpose and Policy Choice

(4) Boyan

Prerequisite: consent of instructor.

An advanced level examination of the sources and processes of policy formation and choice in and for educational institutions.

241A. Politics of Education

(4) Iannaccone

Prerequisite: consent of instructor.

Educational governance and politics are explored as well as legal and extralegal controls exerted upon schools as public institutions.

241BF-BW-BS. Politics of Education

(1-2, 1-2, 1-2) Iannaccone

*Prerequisites: consent of instructor. Education**241A is prerequisite to 241BF. Education**241BF is prerequisite to 241BW, and Education**241BF-BW is prerequisite to 241BS.*

A systematic examination of governance and politics of education in local, state, national, and international contexts. Emphasis is placed on various processes and mechanisms of politicization of educational governance.

242A. Complex Organizations

(4) Friedkin

General theories of complex/formal organizations are explored along with their implications for analysis of educational organizations.

242BF-BW-BS. Advanced Topics on Complex Organizations

(1-2, 1-2, 1-2) Friedkin

*Prerequisite: consent of instructor. Education**242A is prerequisite to 242BF. Education**242BF is prerequisite to 242BW, and Education**242BW is prerequisite to 242BS. Students are advised to consult with the instructor before registering.*

This seminar will involve an intensive literature review and discussion of an active research topic in the field of complex/formal organizations. The particular topic may vary from year to year.

243. The School Administrator

(4) Jamgochian

Prerequisites: graduate standing and consent of instructor.

The role of the school administrator is examined in theoretical and practical contexts.

244. Organizations and Interpersonal Relations

(4) Shapiro

Prerequisite: consent of instructor.

Application of knowledge of interpersonal relations to organizations, not limited to schools. Covers "human side" of management—conflict resolution, communication, motivation, stress, and effects of change—on morale, authority, leadership, and productivity. Emphasizes diagnostic methods, tests, and interviews.

245A. Educational Finance

(4) Glasman

Prerequisite: consent of instructor.

An introduction to the financing of education at the school, district, county, state, and federal levels. Emphasis will be given to the economic foundations of school financing.

246A. Evaluation in Educational Administration

(4) Glasman

Prerequisite: consent of instructor.

Educational evaluation is examined as an executive function. Emphasis is on practices, models, and studies of program and personnel evaluation and the integration of educational evaluation within the context of educational decision making.

246BF-BW-BS. Evaluation in Educational Administration

(1-2, 1-2, 1-2) Glasman

*Prerequisite: consent of instructor. Education**246A is prerequisite to 246BF. Education**246BF is prerequisite to 246BW, and Education**246BW is prerequisite to 246BS.*

Theories and practices of program and personnel evaluation are explored including the use of research methodology in evaluation and the construction of evaluation instruments. Emphasis placed on program characteristics, personnel behavior characteristics, and on their possible correlations with student achievement. Evaluation results are viewed as inputs for administrative decision making.

247A. Seminar in Administrator Behavior and Effects

(4) Boyan

Prerequisite: consent of instructor.

Systematic analysis of the antecedents and consequences of administrator behavior in a variety of educational settings.

247BF-BW-BS. Advanced Seminar in Administrator Behavior and Effect

(1-2) Boyan

*Prerequisite: Education 247A is prerequisite to**Education 247BF. Education 247BF is**prerequisite to 247BW, and Education 247BW**is prerequisite to 247BS.*

In-depth analysis of the literature on administrator behavior and effects in educational organizations, including preparation of independent critiques.

248A. Survey Research Methods

(4) Friedkin

*Prerequisite: Education 114, 213, 214, or**consent of instructor.*

The course provides an introduction to methods of sampling, questionnaire design, and data collection by means of mail surveys.

248B. Survey Research Methods

(4) Friedkin

*Prerequisite: Education 248A or consent of**instructor.*

The course provides an introduction to methods of analysis of survey data.

248C. Survey Research Practicum

(4) Friedkin

Prerequisite: consent of instructor.

Seminar provides practical experience with survey research methods. Students will engage in computer assisted analyses of survey research data.

249A. Practicum—Educational Administration

(1-6) Jamgochian

*Prerequisite: consent of instructor. May be**repeated up to a maximum of nine units.*

Field experience, discussions with school administrators, and simulated activities will be utilized to maximize understanding of the "work world" of school administrators.

249B. Practicum in Advanced Research—Educational Administration

(4) Boyan, Friedkin, Glasman, Iannaccone

Supervised advanced research in the field of organization and policy.

250A-B-C-D. Doctoral Seminar in Confluent Education

(4-4-4-4) Brown, Iannaccone

Prerequisite: consent of instructor.

Critique and integration of major concepts and research in the field of confluent education preparatory to Ph.D. dissertation. Discussion of effective strategies for needed research, assistance in defining areas and problems for dissertation research.

251. Introduction to Self-Science Education

(4) Staff

Prerequisite: consent of instructor.

Experiential learning opportunities and the presentation of theoretical models are combined to help students acquire the tools, skills, and methodologies of the self-scientist. Specific emphasis is placed on classroom applications.

252. Classroom Interaction

(4) Staff

Prerequisite: consent of instructor.

Study of current research and theory related to verbal and nonverbal teacher-student interactions in classroom settings. Use of observation instruments to measure the impact of teacher behavior on student behavior. Guided practice using selected interaction techniques: asking questions, changing wait-time and reward schedules, and other techniques related to success with new curriculum materials.

253A. Design of Instruction

(4) Copeland

Prerequisite: consent of instructor.

An examination of (a) analytical models for the study of instruction, (b) major research findings on school learning, (c) representative instructional strategies and tactics, and (d) skills for designing instructional systems.

253B. Interactive Technology in Education

(4) Copeland

Prerequisites: graduate standing and consent of instructor.

An examination of actual and potential applications of computers to educational purposes including their use with tutorials, drill and practice, and simulation, as tools and educational environments, and in promoting computer literacy. Introduction to classroom appropriate hardware and software use and evaluation.

253C. Computer Programming for Educational Purposes

(4) Copeland

Prerequisite: Computer Science 5PA or consent of instructor.

Applications of programming to educational problems. Special consideration of graphics, user error trapping, formatting, data capturing, and freeform user interaction, user vs. program control and feedback.

253D. Exploratory Learning Environments

(4) Copeland

Prerequisite: consent of instructor.

Application of microcomputer technology to developing environments that students explore, manipulate, and create knowledge constructs. LOGO will be taught as an example of a programming language that applies Piagetian principles of "constructivist" learning. Other interactive learning environments will be discussed.

254. Instructional Supervision and Curriculum Design

(4) Jamgochian

Prerequisites: enrollment in the M.A. and/or Administrative Services Credential Program.

A study of systematic approaches to supervision, and basic conceptions about curriculum theory, design, and evaluation. The role of the administrator as supervisor and developer of curriculum is also examined.

255A. Being a Teacher

(4) Block

This course focuses on the nature of the teacher role. Specifically, it examines school and classroom life from the teacher perspective drawing on literature from educational sociology, social psychology, and anthropology.

255B. Being a Student

(4) Block

This course focuses on the nature of the student role. Specifically, it examines school and classroom life from the student perspective drawing on literature from educational sociology, social psychology, and anthropology.

255C. Reforming the School

(4) Block

In-depth examination of contemporary trends in schooling with special emphasis on current literature on effective schooling, mastery learning, and school reform.

256A. The Methodology of the Affective Domain

(4) Brown

Prerequisite: consent of instructor.

Theories of and practices in the affective domain drawn from humanistic psychology and related disciplines will be examined and applied to classroom or institutional functionings. There will be an experiential component.

256B. The Field of Confluent Education: Survey and Synthesis

(4) Shapiro

Prerequisite: M.A. sequence in confluent education.

Provides a forum framework for review and integration of major theories, concepts, methods of inquiry techniques, and applications of confluent education. Inputs from professors, practitioners, and seminal readings in the field.

257. Practicum in Design of Instruction

(4) Copeland

Prerequisite: consent of instructor.

Guided experience in the development and evaluation of instructional sequences which will be the basis of the master's thesis.

258A. Seminar in Curriculum: Reading

(4) Dixon, Drum

Prerequisites: basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor.

Recent developments, review, and evaluation of current research in curriculum.

258C. Seminar in Curriculum: Language Arts

(4) Dixon

Prerequisites: basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of instructor.

Recent developments, review, and evaluation of current research in the language arts curriculum.

259A-B-C. Practicum in Learning, Measurement, and Evaluation Research

(4-4-4) Block, Cotton, Hubert

Supervised experience in the conduct and presentation of educational research focusing on learning, measurement, and evaluation issues.

260. Seminar: The Creative Process

(4) Brown

Prerequisites: graduate standing and consent of instructor.

A discussion of the research on, and theories of, creativity. Emphasis will be on psychological process rather than on creative productivity. Major foci will be on descriptive studies of the creative person, and contributions to the methodology of creative growth.

261A. Small Group Leadership

(4) Shapiro

Prerequisites: consent of instructor and Education 267 or its equivalent.

An introduction to training leaders in theory and practice of leading small face-to-face groups. Course will cover goals and purposes of small groups such as committees and boards, classrooms, and personal growth groups, emphasizing leader skills in group processes.

261B. The Dynamics of Planned Change

(4) Shapiro

Prerequisite: consent of instructor.

Examination of role of change agents to various client systems with exploration of theories of social change, providing theoretical framework from which to understand systemic problems of individuals and groups. Development of skills of consultants to various social systems.

261C. Human Relations in Education

(4) Shapiro

Prerequisite: consent of instructor.

Application of technology of change agency, group dynamics, and encounter groups or T-Groups to educational systems. Survey of educational institutions and study of human relations procedures available for improvement. Development of "design" capacities in planning human relations programs.

262A. Systematic Training in Counseling Strategies: Observing and Recording Behavior

(1) Staff

Prerequisite: admission to the Counseling Psychology Program.

Laboratory course designed to help individuals learn to observe and record data pertaining to individual and group, as well as institutional patterns which affect behavior of the individual. Student performance must meet specified levels of competency to pass the course.

262B. Systematic Training in Counseling Strategies: Interpreting Behavior

(1) Staff

Prerequisite: admission to the Counseling Psychology Program.

This laboratory course is designed to help students learn to interpret data gained through observations which allow them to put causal relationships into perspective. Student performance must meet specified levels of competency to pass the course.

262C. Systematic Training in Counseling Strategies: Modifying Behavior

(1) Staff

Prerequisite: admission to the Counseling Psychology Program.

This laboratory course is designed to help students develop and employ strategies that allow them to change some aspect of the individual, group, or institution in a manner that directly results in modification of the individual.

262D. Systematic Training in Counseling Strategies: Evaluating Behavior Change

(1) Staff

Prerequisite: admission to the Counseling Psychology Program.

This laboratory course is designed to help students develop and test feedback and research strategies to determine the effectiveness of various modification strategies employed in the counseling process. Student performance must meet specified levels of competency to pass the course.

263A. Advanced Counseling Theories and Techniques

(3) Casas

Prerequisite: consent of instructor.

Course explores underlying assumptions, examines supportive research, and provides prerequisite experience for a variety of counseling strategies. Counseling strategies studied include assertiveness training, behavior rehearsal, bibliotherapy, desensitization, gestalt awareness training, guided fantasy, self-control techniques, social modeling, and reinforcement counseling.

263B. Advanced Counseling Techniques

(3) Mahoney

Prerequisite: Education 263A.

Course explores underlying assumptions, examines supportive research, and provides prerequisite experience for a variety of counseling strategies. Counseling strategies studied include assertiveness training, behavior rehearsal, bibliotherapy, desensitization, gestalt awareness training, guided fantasy, self-control techniques, social modeling, and reinforcement counseling.

264A. Administration of Guidance Services

(3) Atkinson

Prerequisite: consent of instructor.

Students are exposed to a variety of counselor roles, counseling techniques, and current issues associated with school counseling.

264B. Student Personnel Services in Higher Education

(3) Staff

Prerequisite: consent of instructor.

Course provides both a historical and comparative understanding of organized services for students in higher education. Philosophical bases for student personnel services and contemporary issues in American higher education are reviewed and discussed.

264C. Career Counseling

(3) Staff

Prerequisite: consent of instructor.

Examination of vocational development theory, the sociology of work, and career decision making. Counseling strategies for enhancing life planning as a lifelong process will be discussed.

265. Fieldwork in Counseling and Concurrent Seminar

(3) Staff

Prerequisites: consent of instructor and enrollment in the Counseling Psychology Program.

Intensive supervised fieldwork in counseling. A minimum of one full day in an approved practicum setting plus individual and group supervision at the university are required.

266A. Psychometric Theory and Practice

(4) Fitzgerald

An overview of the purposes, uses, administration, and scoring of widely employed group intelligence, aptitude, and achievement tests, interest inventories, and personality measures. Test-related concepts like standardization, norms, validity, and reliability are examined in detail.

266B. Individual Assessment of Intelligence

(3) Fitzgerald

The administration and interpretation of individualized intelligence tests including the Stanford-Binet and Wechsler intelligence scale for children and adults.

266C. Personality Assessment

(3) Fitzgerald

Prerequisite: Education 266A.

An examination of the structure, administration, and interpretation of personality assessment measures used with children and adults.

267. Group Dynamics and Their Applications in Education

(4) Shapiro

Prerequisites: consent of instructor and enrollment in M.Ed. Counseling Psychology Program.

Participation in a training group followed by an examination of school applications for group procedures.

268A. Advanced Fieldwork in Counseling: Educational and Community Agency Settings

(3) Staff

Prerequisites: consent of instructor and nine units of Education 265.

Advanced supervised fieldwork in counseling. A minimum of one full day in an approved setting plus individual and group supervision at the university are required.

268B. Advanced Fieldwork in Counseling: School Psychology

(3) Staff

Prerequisites: consent of instructor and nine units of Education 265.

Advanced supervised fieldwork in an approved school setting under the supervision of a credentialed school psychologist. A minimum of one full day of fieldwork plus individual and group supervision at the university are required.

268C. Advanced Fieldwork in Counseling: Doctoral

(3) Mahoney

Prerequisites: enrollment in Counseling Psychology Program and nine units of Education 265.

Advanced supervised fieldwork in counseling. A minimum of one full day in an approved setting plus individual and group supervision at the university are required.

268D. Advanced Fieldwork in Counseling: Supervision Seminar

(3) Hackett

Prerequisites: consent of instructor and three units of Education 268C.

A minimum of eight hours of fieldwork in supervision of counselor trainees at the university in individual and group supervision settings. Participation in a weekly supervision seminar is also required.

268E. Advanced Fieldwork in Counseling: Counselor Education

(3) Staff

Prerequisite: completion of at least one full year of doctoral studies in counseling psychology.
Supervised fieldwork experience in counselor education. A minimum of three hours per week of classroom experience plus three hours in individual and group supervision seminars.**268F. Advanced Fieldwork in Counseling: Specialized**

(3-12) Casas

Prerequisites: completion of nine units of Education 265, admission to a post-master's degree specialization, and consent of counseling psychology faculty.

Advanced internship in counseling and/or supervision in an approved school or agency setting. Eight to 40 hours weekly of paid fieldwork under the supervision of a licensed or credentialed school or counseling psychologist.

268G. Advanced Fieldwork in Counseling: Doctoral Internship

(6-12) Atkinson

Prerequisites: satisfactory completion of at least one quarter of Education 268C, advancement to candidacy, and consent of counseling psychology faculty.

Advanced internship in counseling in a setting approved by the Counseling Psychology faculty. Twenty to 40 hours weekly of fieldwork under the supervision of a licensed psychologist.

268H. Advanced Fieldwork in Counseling: College Student Personnel

(3) Casas

Prerequisites: consent of instructor and nine units of Education 265.

Advanced supervised fieldwork in counseling. A minimum of one full day of supervised experience in an approved college personnel setting plus weekly seminar at the university.

269A. Family Counseling: Theory and Practice

(3) Atkinson, Hackett

Prerequisite: consent of instructor.

The purpose of this course is to examine the interaction patterns of distressed families, study in detail the psychoanalytic, behavioral, and communication-interactive approaches to family counseling, and expose students to a variety of family counseling techniques.

269B. Fieldwork in Family Counseling

(3) Atkinson

Prerequisites: consent of instructor and admission to the specialization in marriage, family, and child counseling.

The purpose of this course is to provide intensive supervised fieldwork in marriage and family counseling. A minimum of one full day in an approved marriage and family practicum setting will be required.

269C. Sexual Therapy and Counseling

(3) Staff

Prerequisite: consent of instructor.

A detailed study of the biological, psychological, and social components of human sexuality and relationships with a major emphasis on issues of counseling and therapy. Both the theoretical and practical sides of all proven forms of sexual therapy will be covered.

270A. Language Acquisition and Bilingual Education

(4) Delgado-Gaitan

Prerequisite: consent of instructor.

The acquisition of first language in the social and cultural context of the family and community; and implications for learning in the school.

270B. Second Language Learning and Bilingual Education

(4) Trueba

Prerequisite: admission to the Bilingual Crosscultural Specialist Program.

A detailed examination of second language learning theories and their implications for the acquisition of English as a second language and for classroom instruction.

270D. Seminar in Crosscultural Education: Concepts and Theories

(4) Delgado-Gaitan

Prerequisite: consent of instructor.

Presents the theoretical foundations of Crosscultural Education with emphasis on its history, rationale, and objectives.

270F. Assessment in Crosscultural Education Programs

(4) Trueba, Delgado-Gaitan

Prerequisite: consent of instructor.

Examines alternative evaluation approaches for language minority programs, outlines the role of the evaluator, instruments, and processes currently in use.

270G. Crosscultural Curriculum Development in Content Areas

(4) Delgado-Gaitan

Prerequisite: consent of instructor.

Offers the theoretical rationale for curriculum development in Crosscultural Education with its specific goals and objectives in social science, mathematics, science, and related areas.

270H. Culture and Learning

(4) San Miguel

Prerequisite: consent of instructor.

Explores the effect of cultural background and values on learning processes and the implications for the development of appropriate instructional strategies.

271A. The Psychology of Women

(3) Staff

A systematic overview of research on the psychology of women. Topics include: gender-role socialization of women and men, biological, social, and developmental influences on the psychology of women, and topics relevant to counseling such as violence against women, women and work, gender and mental health.

271B. Counseling Women

(3) Hackett, Fitzgerald

Prerequisite: Education 271A.

Topics covered include: 1) facts, myths, and trends regarding female roles, and their implication for counseling, 2) female sex-role socialization and its impact on psychological adjustment, 3) research on counselor attitudes towards women and men, and 4) counseling needs of special groups of women.

272. Contrastive Analysis

(4) Staff

Prerequisite: articulatory phonetics, or introductory course in linguistics.

A systematic comparison of the linguistic systems of English and Spanish, including their phonetic/phonemic systems, their syntactic patterns, and their semantic similarities and differences. Includes practice in the analysis of interference from one language to another.

273. Theories of Student Development

(3) Staff

Prerequisite: consent of instructor.

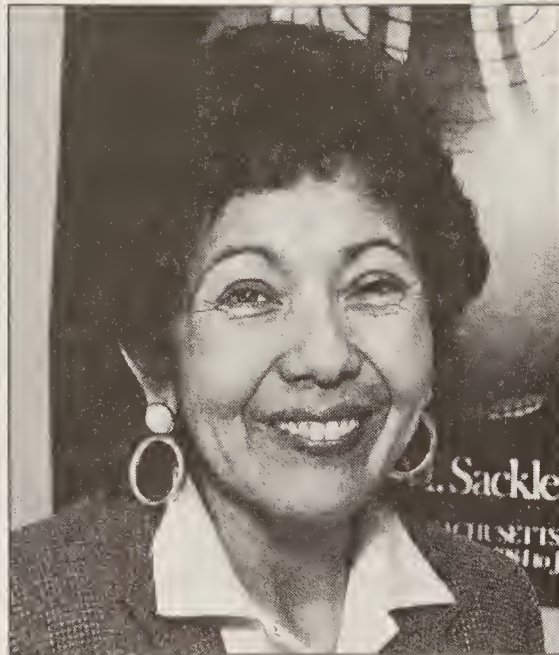
An overview of the historical, philosophical, and theoretical perspectives of student affairs. Current theories of student development are discussed. Student development outcomes are examined from a person-environment interactive perspective.

274. Practicum: Bilingual/Cross-Cultural Education

(1-6) Trueba, Delgado-Gaitan

Prerequisite: admission to the Bilingual/Cross-Cultural Specialist Credential Program.

Candidates will be involved in supervised instructional and curriculum development activities which are designed to enhance their competence as bilingual educators.



My area of research is educational anthropology, the study of complex sociocultural issues related to learning in schools and communities. In particular, I study the way in which people learn and interact in their social and cultural environment, which includes student interactions in the classroom and in the home. I teach in the Crosscultural Studies Program, where my classes deal with topics such as second-language acquisition theory, the role of the family in schooling, and ethnographic research methods.

Some of the studies I have conducted deal with high school dropouts, literacy acquisition by immigrants, and parental involvement in the school. My research is field-intensive and requires spending many hours with people in their schools and communities. The challenge for me is in portraying the lives of the people I study from their own perspective.

My work at UCSB has been very satisfying, due to the intellectually stimulating atmosphere in the department. In our program, the faculty and students work collectively to develop new theory and new practices in the schools.

Concha Delgado-Gaitan
Professor
Graduate School of Education

Dr. Delgado-Gaitan, who holds her doctorate from the Stanford Graduate School of Education, also has extensive experience as an elementary school teacher and principal. Her research interests have developed as an extension of her professional work in schools and communities across California and other states. She chairs committees within the American Anthropological Association and the American Education Research Association, which provide a context for advocating equity in schools.

275. Counseling Theories: Seminar

(3) Staff

Prerequisites: consent of instructor and enrollment in M.Ed. Counseling Psychology Program.

A critical examination of modern theories of counseling, plus intensive supervision of counseling practice.

276. Research in Counseling Practices: Seminar

(3) Staff

Prerequisite: consent of instructor.

A survey of procedures employed in counseling psychology research with special emphasis on intensive experimental designs.

277A. Ethical Standards in Counseling

(3) Atkinson, Casas

Prerequisite: admission to doctoral program in counseling psychology.

This course examines scientific and professional ethics and standards in counseling psychology. In addition to reviewing existing standards, the course focuses on a range of professional issues such as confidentiality, licensure, proactive psychotherapy, and client rights.

277B. Research Design and Methods in Counseling Psychology

(3) Hackett

Prerequisite: admission to doctoral program in counseling psychology.

The course examines both clinical and statistical approaches to counseling psychology research. Special attention is devoted to conceptualizing and developing research proposals in the area of counseling psychology.

277C. Theories of Career Development

(3) Fitzgerald, Hackett

Prerequisite: admission to the doctoral program in counseling psychology.

This seminar focuses on theories of career development, current trends in research, and the input of technological and social changes in the society on the role of work in life-span development.

277D. Current Research in Counseling Psychology

(3) Hackett

Prerequisite: admission to the doctoral program in counseling psychology.

This course focuses on current process and outcome research in counseling psychology. Implications of current research for future research, practice, and counselor education are discussed.

277E. Philosophical Foundations of Counseling

(3) Casas

Prerequisite: admission to the doctoral program in counseling psychology.

This course examines the philosophical foundations of counseling psychology. Historical and contemporary trends in the development of theories in counseling psychology are discussed.

277F. Theory and Research of Group Counseling

(3) Staff

Prerequisite: admission to the doctoral program in counseling psychology.

Course reviews current theory, research, and practices related to group counseling. Special attention is given to comparisons of theoretical approaches and accompanying research strategies used in assessing the effectiveness of group counseling modalities.

277G. Advanced Psychotherapy

(3) Mahoney

Prerequisite: admission to Ph.D. program in counseling psychology.

This is a doctoral seminar devoted to current and classic theories of psychotherapy. Issues of definition, outcome, assessment, and ethics will be addressed. Primary and persistent emphasis will be placed on process and process-oriented analysis of human change, and stabilization.

277H. Advanced Career Counseling

(3) Hackett

Prerequisites: admission to the doctoral program in counseling psychology; Education 277C.

This is a doctoral seminar devoted to the theory and practice of career counseling, outcome, and process research on career interventions, and current issues in career counseling.

278. Cross-Cultural Counseling

(3) Atkinson, Casas

The course reviews current literature on minorities with an emphasis on research related to cross-cultural counseling. Counselor roles and counseling modalities identified as effective in cross-cultural counseling are discussed. Social and individual barriers to cross-cultural counseling are explored.

279A-B-C. Practicum in Language and Reading Research

(4-4-4) Drum, Goldman

Supervised experience in the conduct and presentation of educational research focusing on language and reading issues.

280. Seminar: Issues and Trends in Crosscultural Education

(4) San Miguel

Prerequisite: admission to doctoral study or consent of instructor.

Examines significant issues and research trends related to the theory and practice of crosscultural education at the national, state, and local levels.

281. Seminar: Program Design in Crosscultural Education

(4) San Miguel

Prerequisite: admission to doctoral study or consent of instructor.

A systematic study of major program models in crosscultural education, including the analysis of current teaching methodologies and the design of effective programs to meet the special needs of minority students.

282. Organizations as Learning Systems

(4) Iannaccone

Prerequisite: consent of instructor.

Organizational membership as experiential learning with emphasis on functional and dysfunctional stress around work flow and authority systems, socialization, executive succession, and organizational renewal.

283. Curriculum and Instruction in Confluent Education

(4) Staff

Prerequisite: consent of instructor.

The systematic development of curricular structures and instructional methodology derived from the philosophy and theory of confluent education. Topics include: (a) basic curriculum design, (b) confluent instructional strategies, (c) methodology for diagnosing student concerns and learning styles, (d) evaluation. Class will integrate lectures, discussions, laboratory work, and field observation.

284. Philosophical Dimensions of Confluent Instruction

(4) Shapiro

Prerequisites: enrollment in M.A. in education (confluent program) and consent of instructor.

Consideration of values, ethics, definitions of reality to help students clarify and refine their philosophical framework for teaching, as well as understand underlying philosophical principles for education in general. Attention given to special problems of confluent curriculum and teaching methodology.

285. Clinical Appraisal in Counseling Psychology

(3) Staff

Prerequisite: consent of instructor.

Methods of clinical appraisal other than standardized tests are discussed. Emphasis is placed on the DSM III and other nosologies, including behavioral and developmental methods of clinical appraisal.

286. Visual Media in the Confluent Curriculum

(3) Staff

Prerequisite: consent of instructor.

An examination of varied uses of visual media in the classroom. Emphasis is on classroom environmental enrichment and facilitation of learning through the integration of films with the traditional disciplines. Attention is given to the affective domain and student filmmaking.

287. Organizational Leadership Issues in Literature

(4) Iannaccone

Readings from organizational theory and novels of military, economic, educational, and governmental organizations. Organizational issues emphasized are: executive succession and related organizational changes, bureau pathology, inter-agency conflict, means-ends reversals, organizational mindlessness, and human stress.

288A. Principles of Confluent Education

(3) Staff

Course applies to the methodology of confluent education to help teachers learn to alter those patterns of thought, feeling, and action which interfere with their effectiveness as teachers. Classroom applications of this methodology in assisting students to change non-productive learning patterns are also studied.

288B. Issues in Confluent Education

(4) Shapiro

Prerequisite: consent of instructor.

Survey of key problems and trends in confluent education. Strategies for introducing confluent education into educational systems, personal and intellectual criteria for selection of confluent educators. Research and assessment procedures and future of confluent and other humanistically oriented approaches.

289. Practicum in Confluent Education

(1-6) Staff

Prerequisite: admission to M.A., M.Ed., or Ph.D. in confluent education.

Supervised practice in applications of techniques, methods, and curricula of confluent education in public schools, private schools, higher education, community education, and other educational programs or systems.

290A. Artificial Intelligence—Cognitive Modeling I

(4) Cotton, Smith

*Recommended: Computer Science 185.**Crosslisted with Geography 295A.*

Computer programming techniques for processing information in an "intelligent" manner. LISP language, control structures (pattern-directed vs.

goal-directed), knowledge structures (declarative vs. procedural), and problem solving (search and inference) will be presented.

290B. Artificial Intelligence—Cognitive Modeling II

(4) Cotton

Prerequisite: Education 290A. Crosslisted with Geography 295B.

Computer programming techniques for processing information in an "intelligent" manner. LISP programming will be emphasized, as will techniques for incorporating learning and analogies. Other topics are: expert systems, imagery, pattern recognition, planning, natural languages, story understanding, and spatial knowledge representation.

291. Cognition and Language in Early Childhood

(4) Zimmer

Prerequisite: admission to the doctoral program in education.

This course considers various theoretical views of the relationship between cognition and language acquisition. Such topics as concept formation, mediation, communication, intentionality, perception, sensory motor skills, and others will be explored.

292A-B-C. Interview and Observational Methods for Early Childhood

(4-4-4) Zimmer

Prerequisites: admission to Masters in Early Childhood Education or Doctoral program with emphasis in Early Childhood Education.

Course will provide methods of interviewing children from ages two to eight. Emphasis is placed on "clinical" interview techniques using age appropriate materials. Methods of observing child at play and in natural settings are presented and theory acquisition are utilized in an applied setting.

295A-C-E-F. Seminar in Educational Psychology

(4-4-4-4) Block, Cotton, Hubert, Pellegrino, Thomas

Prerequisite: admission to Ph.D. program.

A. Effective Processes, C. Cognitive Learning, E. Structure of Intellect, F. Psychological Base for Modern Instructional Procedures. Sections A-C-E-F are given as separate units, and may be taken more than once by a student with the consent of the instructor.

296A. Educational/Psychological Characteristics of the Severely Handicapped Child

(4) Haring

Prerequisite: consent of instructor.

Theoretical and applied models for the education of SH children. Historical and cultural perspectives, service needs of severely handicapped.

296B. Assessment, Instruction, Evaluation of Severely Handicapped Students

(4) Haring

Prerequisite: Education 296A.

Methods of systematic assessment, instruction, and evaluation including observational techniques, curriculum development, and single subject evaluation design for teaching severely handicapped.

297A. Ways of Knowing

(4) Iannaccone

Prerequisite: admission to doctoral program in education

A seminar focusing on the varied approaches to inquiry utilized by disciplines in the natural sciences, social sciences, fine arts, and humanities.

TEACHER PREPARATION

Professional preparation in teaching (300-393 series): These courses are designed for the professional sequence in approved credential programs. They provide theory related to field practice in teaching, and cover the design of instructional materials, and the psychology of learning. The student teaching experience provides the opportunity for application of university course work in practice. Courses in the 392 series have as a prerequisite admission to a teaching credential program at UCSB. The Education 392 series courses coincide with the calendar of the public schools.

R390F-W. Procedures for Secondary Reading

(2-1) Dixon

Prerequisite: admission to the Single Subject Credential Program. Education R390F is prerequisite to R390W. ED R390F-W is a two-quarter sequence course; both quarters must be taken to receive credit.

Application of research and theory to procedures in the teaching of reading through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs. Designed to coincide with semester system of public schools.

S390. Procedures Used for the Teaching of Art in the Schools

(3) Staff

Prerequisites: graduate standing and consent of instructor. Not open to students who received credit for Art Studio 290.

Students are given "hands on experiences" in developing art instructional strategies. They are prepared to teach the art curriculum commonly taught in California schools. Recent ideas from the literature on art education are covered.

SF390. Curriculum and Instructional Procedures and Materials Used in the Teaching of French

(3) Staff

Prerequisite: required background in French. Methodology of foreign language teaching with particular application to French.

SM390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Mathematics

(3) Staff

Prerequisite: required background in mathematics.

Procedures, curriculum, research, and theory related to teaching and learning mathematics.

SN390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Spanish

(3) Staff

Prerequisite: required background in Spanish. Methodology of foreign language teaching with particular application to Spanish.

SPE390. Special Education for the Regular Class Teacher

(4) Gerber

Prerequisite: admission to Multiple Subject Credential Program.

Major topics in special education designed for students preparing to teach regular (non-special education) elementary classes. Topics include the regular class teacher's role in the education of handicapped, methods of accommodating a wide range of individual differences in the classroom.

SPS390. Special Education in the Secondary School

(4) Morrison

Prerequisite: admission to Single Subjects Credential Program.

A survey course in special education for students preparing to teach at the high school level. Topics include educational policy, instructional modification, and the role of the teacher in meeting the education needs of the handicapped adolescent.

SS390F-W-S. Instructional Procedures Used in the Teaching of Social Studies

(1-1-1) Staff

Prerequisite: graduate standing. Education SS390F is prerequisite to SS390W, and Education SS390F-W are prerequisite to SS390S. Education SS390F-W-S is a three-quarter in-progress course. All three-quarters must be taken to receive credit for a total of three units.

This course is required of candidates for the Single Subject Credential in one of the following social sciences: anthropology, economics, history, political science, sociology, geography, psychology, or combined social sciences.

ST390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Science

(3) Staff

Prerequisite: required background in physical or life sciences.

Lecture-discussion sessions considering secondary school science curriculum materials, and the objectives and teaching strategies appropriate to these materials.

E391A. Materials Used in Teaching of Mathematics in Elementary Schools

(3) Zimmer

Prerequisites: graduate standing and enrollment in the Multiple Subjects Credential Program.

The application of research and theory to classroom practice in the teaching of mathematics.

E391BW-BS. Elementary Science Teaching Procedures

(2-1) Staff

Prerequisites: graduate standing and enrollment in the Multiple Subjects Credential Program.

Education E391BW is prerequisite in E391BS. Education E391BW-BS is a two-quarter sequence course; both quarters must be taken to receive credit.

The application of research and theory to classroom practice in the teaching of science.

E391CW-CS. Elementary Social Studies Teaching Procedures

(2-1) Staff

Prerequisites: graduate standing and enrollment in the Multiple Subjects Credential Program.

Education E391CW is prerequisite to E391CS. Education E391CW-CS is a two-quarter sequence course; both quarters must be taken to receive credit.

The application of research and theory to classroom practice in the teaching of social studies.

E391DF-DW. Elementary Reading and Language Arts Teaching Procedures

(3-2) Staff

Prerequisite: admission to the Multiple Subjects Credential Program. Education E391DF is prerequisite to E391DW. Education E391DF-DW is a two-quarter sequence course; both quarters must be taken to receive credit.

Application of research and theory to classroom practice in the teaching of reading and language arts through problem solving situations, inductive reasoning and discovery, and adapting instruction to individual reading needs. This is an in-progress graded course over two quarters for a total of five units.

E391E. Teaching Strategies: Bilingual/Cross-Cultural Education

(3) Staff

Prerequisites: consent of instructor and admission to the Bilingual/Cross-Cultural Emphasis Program.

An examination of theoretical frameworks for bilingual education. Students will also learn teaching methods for the Spanish-English classroom with particular emphasis on language arts.

E391F. Teaching Curriculum: Bilingual/Cross-Cultural Education

(3) Staff

Prerequisites: consent of instructor and admission to Bilingual/Cross-Cultural Emphasis Program.

A detailed examination and application of teaching methods for the Spanish-English bilingual/cross-cultural classroom in the areas of science, mathematics, social science, reading, writing, and culture. Examination of materials and development of new and appropriate materials.

E391G. Applications of Theory: Bilingual/Cross-Cultural Education

(3) Staff

Prerequisites: consent of instructor and admission to Bilingual/Cross Cultural Emphasis Program.

Applications of theory and policy will be analyzed for purposes of teaching applications. ESL and bilingual teaching methods will be reviewed and connected with classroom application through student teaching experiences.

E391HF-HW-HS. Basic Procedures for Teaching English as a Second Language

(1-1-1) Calderon

Prerequisite: enrollment in Multiple Subject Teaching Credential Program. Education E391HF-HW-HS is a three-quarter in-progress course. All three quarters must be completed to receive a total of three units.

Practical theories and teaching strategies for teaching students from diverse language groups will be examined and practiced through workshop styles. Methods such as TPR, Natural Approach and Sheltered Science, social studies, and mathematics will be presented.

E392F-W-S. Supervised Teaching: Elementary Schools

(7-7-14) Staff

Prerequisite: admission to the Multiple Subject Credential Program.

Supervised teaching.

R392A-B. Secondary Reading Laboratory Field Experience

(2-2) Dixon

Supervised field experience in reading instruction for secondary teacher candidates.

S392. Student Teaching: Secondary Education

(3-9) Jamgochian

Prerequisites: admission to the Single Subject Credential Program and consent of instructor. Supervised teaching at the secondary level.

SF392. Student Teaching: French

(3-9) Staff

Prerequisites: admission to the Single Subject Credential Program and consent of instructor. Supervised teaching at the secondary level in French.

SM392. Student Teaching: Mathematics

(3-9) Staff

Prerequisite: admission to the Single Subject Credential Program in mathematics. Supervised teaching at the secondary level in mathematics.

SN392. Student Teaching: Spanish

(3-9) Staff

Prerequisite: admission to the Single Subject Credential Program in Spanish.

Supervised teaching at the secondary level in Spanish.

SS392. Student Teaching: Social Studies

(3-9) Staff

Prerequisite: admission to the Single Subject Credential Program in social studies.

Supervised teaching at the secondary level in social studies.

ST392. Student Teaching: Science Education

(3-9) Staff

Prerequisite: admission to the Single Subject Credential Program in science.

Supervised teaching at the secondary level in science.

E393. Seminar in Student Teaching

(1) Staff

Prerequisite: concurrent enrollment in Education E392.

This seminar will cover problems related to student teaching.

S393. Seminar in Secondary Teaching

(1) Jamgochian

Prerequisite: taken concurrently with supervised teaching.

This seminar will cover problems related to student teaching.

SF393. Seminar in Teaching French

(1) Staff

Prerequisite: taken concurrently with supervised teaching in French.

This seminar will cover problems related to student teaching.

SM393. Seminar in Teaching Mathematics

(1) Staff

Prerequisite: taken concurrently with supervised teaching in mathematics.

This seminar will cover problems related to student teaching.

SN393. Seminar in Teaching Spanish

(1) Staff

Prerequisite: taken concurrently with supervised teaching in Spanish.

This seminar will cover problems related to student teaching.

SS393. Seminar in Teaching Social Studies

(1) Staff

Prerequisite: taken concurrently with supervised teaching in social studies.

This seminar will cover problems related to student teaching.

ST393. Seminar in Teaching Science

(1) Staff

Prerequisite: taken concurrently with supervised teaching in science.

This seminar will cover problems related to student teaching.

E394. Collegial Observation and Communication Skills Development

(1) Jamgochian

Prerequisite: admission to secondary or elementary credential program.

Designed to teach observation and communication skills to student teachers in order that they might engage in peer or collegial observation of one another.

395. Application of Computers to Educational Purposes

(2) Copeland

Prerequisites: admission to Multiple Subject and Single Subject credential program.

Examination of varieties of computer applications in schools including computers as instructional tools and administrative aids, programming, computer managed instruction, and varieties of computer mediated instruction including drills, practice, demonstration, tutorial, simulation, and gaming.

ADVANCED STUDIES*Advanced study and research courses (594-599 series): The 594-599 series of courses are for advanced study and/or research. Letter designations appearing after the course number refer to the following areas of specialty:***BI** Bilingual Education**CC** Crosscultural**CE** Confluent Education**CP** Counseling Psychology**EP** Educational Psychology**EX** Educational Policy and Organizational Studies**IE** International Education**IN** Instruction (Interactive Educational Technology)**LA** Language Development and Reading**SE** Special Education**594BI. Special Topics**

(1-4) Delgado-Gaitan, San Miguel, Trueba

Prerequisite: consent of instructor.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594CC. Special Topics

(1-4) Delgado-Gaitan, San Miguel, Trueba

Prerequisite: consent of instructor.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields.

594CE. Special Topics

(1-4) Brown, Iannaccone, Shapiro

Prerequisite: consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594CP. Special Topics

(1-4) Fitzgerald, Hackett, Mahoney

Prerequisites: enrollment in the counseling program and consent of instructor.

Special seminars dealing with selected topics in the field of counseling psychology.

594EP. Special Topics

(1-4) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594EX. Special Topics

(1-4) Boyan, Friedkin, Glasman, Iannaccone,

Jamgochian

Prerequisite: consent of instructor.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594IE. Special Topics

(1-4) Thomas

Prerequisite: consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594IN. Special Topics in Instruction

(3) Copeland

Prerequisite: consent of instructor.

An exploration of special topics in instruction, especially relating to the theoretical basis and practical skills needed to evaluate instructional sequences in terms of desired pupil performance.

594LA. Special Topics

(1-4) Dixon, Drum, Goldman

Prerequisite: consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594SE. Special Topics

(1-4) Gerber, Haring, M. Semmel

Prerequisite: consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

596BI. Directed Reading and Research

(2-12) Delgado-Gaitan, San Miguel, Trueba

Prerequisite: admission to Ph.D. bilingual program or consent of instructor.

This course allows students, under the direct guidance of the instructor, to pursue research in the area of bilingual/cross-cultural education as it relates to their chosen field of specialization.

596CC. Directed Reading and Research

(2-12) Delgado-Gaitan, San Miguel, Trueba

Prerequisite: consent of instructor.

This course allows the student, under the direct guidance of the instructor, to pursue research in the area of crosscultural education as it relates to his/her chosen field of specialization.

596CE. Directed Reading and Research

(2-12) Brown, Iannaccone, Shapiro

Prerequisite: consent of instructor.

Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596CP. Directed Reading and Research

(2-12) Atkinson, Casas, Fitzgerald, Hackett, Mahoney

Prerequisites: graduate standing, enrollment in the counseling program, and consent of instructor.

Independent research and/or reading in counseling in areas not covered by courses offered.

596EP. Directed Reading and Research

(2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer

Prerequisite: consent of instructor.

Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596EX. Directed Reading and Research
(2-12) Boyan, Friedkin, Glasman, Iannaccone, Jamgochian
Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential students by petition.

596LA. Directed Reading and Research
(2-12) Dixon, Drum, Goldman
Prerequisite: consent of instructor.
Individual tutorial in directed reading and the review of pertinent research on special topics in relation to elementary reading and/or language arts.

596SE. Directed Reading and Research in Special Education
(2-12) Gerber, M. Semmel, Haring, D. Semmel
Prerequisite: open to students in Special Education Program or consent of program leader.
Supervised research in the field of special education and related areas of concentration involving handicapped children.

597BI. Individual Study for Comprehensive Examinations
(2-12) Delgado-Gaitan, San Miguel, Trueba
Prerequisite: admission to master's degree program in bilingual education. No unit credit allowed toward advanced degree.
Preparation for master's comprehensive examinations in bilingual/bicultural education.

597CC. Individual Study for Comprehensive Examinations
(2-12) Delgado-Gaitan, San Miguel, Trueba
Prerequisite: admission to master's degree program in crosscultural education.
Preparation for master's comprehensive examinations in crosscultural education.

597CE. Individual Study for Comprehensive Examinations
(2-12) Brown, Iannaccone, Shapiro
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Preparation for master's or Ph.D. comprehensive examinations in confluent education.

597CP. Individual Study for Comprehensive Examinations
(2-12) Atkinson, Casas, Fitzgerald, Hackett, Mahoney
Prerequisites: completion of 24 graduate units in the Counseling Program for master's students; completion of 36 graduate units in the

counseling program for Ph.D. students. No unit credit allowed toward advanced degree.
Preparation for master's degree comprehensives or doctoral examinations. Contracts to be worked out with student's major professor.

597EP. Individual Study for Comprehensive Examinations
(2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Preparation for master's or Ph.D. comprehensive examinations in educational psychology.

597EX. Individual Study for Comprehensive Examinations
(2-12) Boyan, Friedkin, Glasman, Iannaccone
Prerequisite: admission to Educational Administration Program. No unit credit allowed toward advanced degree.
Preparation for master's or Ph.D. comprehensive examination in educational policy and organizational studies.

597LA. Individual Study for Comprehensive Examinations
(2-12) Drum, Goldman
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Preparation for master's or Ph.D. comprehensive examinations in language development and reading.

597SE. Individual Study for Comprehensive Examinations
(2-12) Gerber, M. Semmel, Haring, D. Semmel
Prerequisites: consent of instructor and admission to Special Education Program. No unit credit allowed toward advanced degree.
Preparation for master's or Ph.D. comprehensive examinations in special education.

598CC. Master's Thesis Research and Preparation
(2-12) Delgado-Gaitan, San Miguel, Trueba
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Supervised research and writing of the thesis for master's degree in crosscultural education.

598EP. Master's Thesis Research and Preparation
(2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Supervised research and writing of the thesis for master's degree in educational psychology.

598IT. Master's Thesis Research and Preparation
(2-12) Staff
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Supervised research and writing of the thesis for master's degree in instruction.

598SE. Master's Thesis Research and Preparation
(2-12) Gerber, M. Semmel, Haring, D. Semmel
Prerequisite: consent of instructor. No unit credit allowed toward advanced degree.
Supervised research and writing of the thesis for the master's degree in special education.

599CE. Ph.D. Dissertation Preparation
(2-12) Brown, Iannaccone, Shapiro
Prerequisite: consent of instructor.
Writing of dissertation in doctoral degree program in confluent education.

599CP. Ph.D. Dissertation Preparation
(2-12) Atkinson, Casas, Fitzgerald, Hackett, Mahoney
Prerequisite: completion of doctoral qualifying examinations.
Writing the dissertation for doctoral degree in counseling psychology.

599EP. Ph.D. Dissertation Preparation
(2-12) Block, Cotton, Hubert, Pellegrino, Thomas, Zimmer
Prerequisite: consent of instructor.
Writing of dissertation for doctoral degree program in educational psychology.

599EX. Ph.D. Dissertation Preparation
(2-12) Boyan, Everhart, Friedkin, Glasman, Iannaccone
Prerequisite: consent of instructor.
Writing of dissertation for doctoral degree in Educational Policy and Organizational Studies Program.

599LA. Ph.D. Dissertation Preparation
(2-12) Drum, Goldman
Prerequisite: consent of instructor.
Writing of doctoral dissertation in language development and reading.

599SE. Ph.D. Dissertation Preparation
(2-12) Gerber, M. Semmel, Haring, D. Semmel
Prerequisite: consent of instructor.
Writing of dissertation for doctoral degree in special education.

Appendix

Officers of Administration

Effective July 1, 1987

The Regents of the University of California

Regents Ex Officio

George Deukmejian
Governor of California
Leo T. McCarthy
Lieutenant Governor of California
Willie L. Brown, Jr.
Speaker of the Assembly
Bill Honig
State Superintendent of Public Instruction
Claude B. Hutchison
President of the Alumni Association of the University of California
James Toledano
Vice President of the Alumni Association of the University of California
David P. Gardner
President of the University

Appointed Regents

Sheldon W. Andelson
Roy T. Brophy
Yvonne Brathwaite Burke
Glenn Campbell
Edward W. Carter
Frank W. Clark, Jr.
Tirso Del'junco
David Geffen
Jeremiah F. Hallisey
Willis W. Harman
John F. Henning
Frank L. Hope, Jr.
Leo S. Kolligian
Vilma S. Martinez
Joseph A. Moore
Robert N. Noyce
Jacquelyn Ross
Stanley K. Sheinbaum
William French Smith
Yori Wada
Dean A. Watkins
Harold M. Williams
William A. Wilson

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Murray L. Schwartz

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General Counsel
Bonnie M. Smotony
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Herbert M. Gordon
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Senior Vice President — Administration
William B. Baker
Vice President — Budget and University Relations
Cornelius L. Hopper
Vice President — Health Affairs
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Janet E. Young
Special Assistant to the President

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Chancellor at Berkeley
Theodore L. Hullar
Chancellor at Davis
Jack W. Peltason
Chancellor at Irvine
Charles E. Young
Chancellor at Los Angeles
Rosemary S. J. Schraer
Chancellor at Riverside
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Chancellor at San Diego
Julius R. Krevans
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Chancellor at Santa Barbara
Robert B. Stevens
Chancellor at Santa Cruz

Santa Barbara Campus

Chancellor
Barbara S. Uehling
Assistant Chancellor/Executive Assistant to the Chancellor
Betsy B. Watson
Chancellor Emeritus
Vernon I. Cheadle
The Vice Chancellor, Acting
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Associate Vice Chancellor, Research and Academic Development and Administration, Acting
James Case
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Assistant Vice Chancellor, Personnel Services
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Assistant Chancellor, Budget and Administrative Operations
Roger L. Horton
Assistant Chancellor, Planning and Analysis
Richard W. Jensen
Assistant Chancellor, Development, Acting
Charles W. Knox
College of Letters and Science
David A. Sprecher, *Provost*
W. Douglas Morgan, *Associate Dean*
Ursula R. Mahlendorf, *Associate Dean*
William S. Wise, *Dean, Basic Skills Development*
College of Creative Studies
Max Weiss, *Provost*
College of Engineering
Robert Mehrabian, *Dean Graduate Division*
David S. Simonett, *Dean Graduate School of Education (search in progress)*
Education Abroad Program
William H. Allaway, *Director Instructional Development*
Richard E. Oglesby, *Dean Summer Sessions*
Eugene Johnson, *Director University Extension/Off Campus Studies*
John C. Maxwell, *Director University Librarian*
Joseph A. Boisse
Dean of Admissions and Registrar
Charles W. McKinney

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Theofanis G. Theofanous, *Director*
Center for Black Studies
Cedric J. Robinson, *Director*
Center for Computational Sciences and Engineering
John L. Bruno, *Director*
Center for Robotic Systems in Microelectronics
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Compound Semiconductor Research Center
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Institute for Theoretical Physics
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Jorge De Sena Center for Portuguese Studies
Eduardo Raposo, *Director*
Ocean Engineering Laboratory
Marshall P. Tulin, *Director*

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Juan Palerm, *Director*
Community and Organization Research Institute
Harold L. Votey, Jr., *Director*
Computer Systems Laboratory
John L. Bruno, *Director*
Institute of Environmental Stress

Steven Fisher, *Director*
Institute of Interdisciplinary Applications of Algebra and Combinatorics
Alan Laub, *Acting Director*
Institute for Polymers and Organic Solids
Alan J. Heeger, *Director*
Intercampus Institute for Research at Particle Accelerators
David O. Caldwell, *Director*
Marine Science Institute
James Kennett, *Director*
Quantum Institute
Vincent Jaccarino, *Director*
Social Process Research Institute
Richard Berk, *Director*

Natural Reserve System

Carpinteria Salt Marsh Reserve
David Coon, *Manager*
Coal Oil Point Reserve
David Coon, *Manager*
Santa Cruz Island Reserve
Sally Holbrook, *Faculty Manager*
Lyndal Laughrin, *Resident Manager*
Valentine Eastern Sierra Reserve (includes Valentine Camps and Sierra Nevada Aquatic Research Laboratory)
John M. Melack, *Faculty Manager*
Daniel R. Dawson, *Resident Manager*

Equal Opportunity and Nondiscrimination

The University of California, in compliance with Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Sections 503 and 504 of the Rehabilitation Act of 1973, does not discriminate on the basis of race, color, national origin, religion, sex, or handicap in any of its policies, procedures, or practices; nor does the university, in compliance with the Age Discrimination in Employment Act of 1967, Section 402 of the Vietnam Era Veterans Readjustment Act of 1974, and Section 12940 of the State of California Government Code, discriminate against any employees or applicants for employment on the basis of their age, or because they are disabled veterans or veterans of the Vietnam era, or because of their medical condition (as defined in Section 12926 of the California Evidence Code), their ancestry, or their marital status; nor does the university discriminate on the basis of citizenship, within the limits imposed by law or university policy; nor does the university discriminate on the basis of sexual orientation. This nondiscrimination policy covers admission, access, and treatment in university programs and activities, and application for and treatment in university employment.

In conformance with university policy and pursuant to Executive Orders 11246 and 11375, Section 503 of the Rehabilitation Act of 1973, and Section 402 of the Vietnam Era Veterans Readjustment Act of 1974, the University of California is an affirmative action/equal opportunity employer.

Inquiries regarding the university's equal opportunity policies may be directed to:

Raymond Huerta, affirmative action coordinator; telephone (805) 961-2089.

California Residency and the Nonresident Tuition Fee

Tuition Fee for Nonresident Students

Students who have not been residents of California for more than one year immediately prior to the residence determination date for each term in which they propose to attend the university are charged, along with other fees, a nonresident tuition fee. The residence determination date is the day instruction begins at the last of the University of California campuses to open for the quarter, and for schools on the semester system, the day instruction begins for the semester.

1. Law Governing Residency

The rules regarding the establishment of legal residence for tuition purposes at the University of California are governed by California Education Code (sections 68000 et. seq.) and by the Standing Orders of The Regents of the University of California [section 110.2(a)-(d)]. Under these rules residence for tuition purposes can be established by adult citizens or by certain classes of aliens. There are also particular rules applicable to the residence classification of minors (under 18) in that such residence is generally regarded as being derived from the parent or parents with whom the minor last resided.

2. Who Is a Resident?

In order to be classified as a resident for tuition purposes upon admission, an adult student, other than an adult alien present in the United States under the terms of a non-immigrant status which precludes the adult alien from remaining permanently in the U.S., must have established his or her residence in California for more than one year immediately preceding the residence determination date for the term during which he or she proposes to attend the university and must have relinquished any prior residence. An individual must couple his or her physical presence within this state for one year with objective evidence that such presence is consistent with his or her intent in making California his or her permanent home and, if these steps are delayed, the one-year durational period will be extended until both presence and intent have been demonstrated for one full year. Physical presence within the state solely for educational purposes does not constitute the establishment of California residence under state law, regardless of the length of stay.

3. Establishing the Requisite Intent to Become a California Resident

Relevant indicia which can be relied upon to demonstrate one's intent to make California one's permanent residence include the following: registering to vote and voting in California elections; designating California as one's permanent address on all school and employment records, including military records if one is

in the military service; obtaining a California driver's license or if a nondriver, California identification card; obtaining California vehicle registration; paying California income taxes as a resident, including income earned outside California from the date residence is established; establishing an abode where one's permanent belongings are kept within California; licensing for professional practice in California; and the absence of these indicia in other states during any period for which residence in California is asserted. Documentary evidence may be required. All relevant indicia will be considered in the classification determination. A person's residence shall not be derivative from that of his/her spouse.

General Rules Applying to Minors

The residence of the parent with whom an unmarried minor (under age 18) child maintains his or her place of abode is the residence of the unmarried minor child. The residence of an unmarried minor who has a parent living cannot be changed by his or her own act, by the appointment of a legal guardian, or by the relinquishment of a parent's right of control. When the minor lives with neither parent, residence is that of the parent with whom the student maintained the last place of abode. A minor, except a minor alien present in the United States under the terms of a non-immigrant status which precludes the minor alien from remaining in the U.S. permanently, may establish residence when both parents are deceased and a legal guardian has not been appointed. Where the residence of the minor is derived, the California residence of the parent from whom it is derived must satisfy the one-year duration requirement.

Specific Rules Applying to Minors

1. Divorced / Separated Parent Situations

The student must move to California to live with the California resident parent while the student is still a minor (before his or her 18th birthday) in order to receive derivative California resident status. Otherwise, he or she will be treated like any other adult coming to California to establish legal residence.

2. Parent of Minor Moves from California

A student who is a U.S. citizen or eligible alien who remains in the state after his or her parent, who was a resident of California for at least one year immediately prior to leaving and has, during the student's minority and within one year immediately prior to the residence determination date established residence elsewhere, shall be entitled to resident classification until the student has attained the age of majority and has resided in the state the minimum time necessary to become a resident so long as, once enrolled, he or she maintains continuous attendance at an institution.

3. Self-Support

Nonresident students who are minors or 18 years of age, who are U.S. citizens or eligible aliens, and who have demonstrated the intent to make California their permanent home and can evidence that they have been self-supporting and actually present within California for the entire year immediately prior to the residence determination date may be eligible for resident status.

4. Two-Year Care and Control

Students who are U.S. citizens or eligible aliens shall be entitled to resident classification if immediately prior to the residence determination date, they have lived with and been under the continuous direct care and control of any adults other than a parent for not less than two years, provided that the adult or adults having such control have been California residents during the year immediately prior to the residence determination date. This exception continues until the student has attained the age of majority and has resided in the state the minimum time necessary to become a resident student, so long as continuous attendance is maintained at an institution.

Exemptions from Nonresident Tuition

1. Spouse or Other Dependents of Military Personnel

Exemption from payment of the nonresident tuition fee is available to a spouse or to a natural or adopted child or stepchild who is a dependent of a member of the United States military stationed in California on active duty. Such exemption shall be maintained until the student has resided in California the minimum time necessary to become a resident. The student must petition for this exemption each term he or she is eligible. If a student is enrolled in an institution and (1) the member of the military is transferred on military orders to a place outside the state where he or she continues to serve in the armed forces or (2) the member of the military retires from active duty immediately after having served in California on active duty, the student shall retain this exemption under conditions set forth above.

2. Military Personnel

A student who is a member of the United States military stationed in California on active duty, except a member of the military assigned for educational purposes to a state-supported institution of higher education, shall be entitled to resident classification until he or she has resided in the state the minimum time necessary to become a resident.

3. Child or Spouse of Faculty Member or Member of the UC Management Program

The unmarried, dependent child under age 21 or the spouse of a member of either a university faculty who is a member of the Academic Senate or a member of the U.C. Management Program may be eligible for

a waiver. Confirmation of the faculty member's membership on the Academic Senate shall be secured each term before this waiver is granted.

4. Child of University Employee

The unmarried, dependent child under age 21 or a full-time university employee whose assignment is outside California and who has been employed by the university for more than one year may be entitled to a waiver of the nonresident fee. The parent's employment status with the university shall be ascertained each term that the student requests the waiver.

5. Children of Deceased Public Law Enforcement or Fire Suppression Employees

Children of deceased public law enforcement or fire suppression employees, who were California residents and who were killed in the course of fire suppression duties or law enforcement duties, may be entitled to an exemption of the nonresident fees.

Reclassification Petitions

Financial independence will be included among the factors considered for students classified nonresident seeking reclassification to resident for tuition purposes. Financial independence will not be considered for graduate students who are teaching assistants, research assistants or teaching associates employed on a 0.49 or more time basis for the term for which reclassification is sought.

Students MUST PETITION IN PERSON at the Office of the Registrar for a change of classification from nonresident to resident status. All changes of status must be initiated prior to the first day of instruction for the term of attendance for which the student seeks reclassification.

Time Limitation on Providing Documentation

If additional documentation is required for either an initial residence classification or reclassification but is not readily accessible, the student will be allowed a period of time no later than the end of the applicable term to provide such documentation.

Incorrect Classification

All students classified incorrectly as residents are subject to reclassification and to payment of all nonresident fees not paid. If incorrect classification results from false or concealed facts by the student, the student is also subject to university discipline. Resident students who become nonresidents must immediately notify the residence deputy.

Inquiries and Appeals

Inquiries regarding residence requirements for tuition purposes should be initially directed to the CAMPUS RESIDENCE DEPUTY, Office of the Registrar, Room 1117, Cheadle Hall, University of California, Santa Barbara, CA 93106; telephone (805) 961-3033; or to the Legal

Analyst — Residence Matters, 590 University Hall, Berkeley, CA 94720. NO OTHER UNIVERSITY PERSONNEL ARE AUTHORIZED TO SUPPLY INFORMATION RELATIVE TO RESIDENCE REQUIREMENTS FOR TUITION PURPOSES. The student is cautioned that this summation is NOT a complete explanation of the law regarding residence. A copy of regulations adopted by the Regents of the University of California is available for inspection in the Office of the Registrar. Please note that changes may be made in the residence requirements between the publication date of this statement and the relevant residence determination date. Any student, following a final decision on residence classification by the residence deputy, may make a written appeal to the legal analyst within 90 days of the notification of the final decision by the residence deputy.

Confidentiality and Accessibility of Student Records

The University of California campuses maintain various types of records pertaining to students. Student records — that is, those pertaining to students in their capacity as students — include but are not limited to academic evaluations, transcripts, test scores and other academic records, general counseling and advising records, disciplinary records, and financial aid records.

The disclosure of information from student records is governed in large measure by the Federal Family Educational Rights Privacy Act of 1974, by the State of California Education Code, and by university policy and procedures implementing these laws that protect the student's right of privacy, provide safeguards for the confidentiality of student records, and permit students access to their own records.

Pursuant to the Federal Family Educational Rights and Privacy Act of 1974, the University of California Policies Applying to the Disclosure of Information from Student Records, and campus implementing procedures found in Policy P-1710 and Procedure 1711 in the UCSB Policies and Procedures Manual, students at the Santa Barbara campus of the university have the right:

1. To inspect and review records pertaining to themselves in their capacity as students;
2. To have withheld from disclosure, absent their prior consent for release, personally identifiable information from their student records, with exceptions as noted in Section 10.70 of the university's policies;
3. To inspect records maintained by the campus of disclosures of personally identifiable information from their student records;
4. To seek correction of their student records through a request to amend

- the records or a request for a hearing; and
5. To file complaints with the Department of Education regarding alleged violations of the right accorded them by the Federal Act.

Copies of the university's policies and campus implementation procedures can be obtained from and questions regarding various privacy regulations can be addressed to the Santa Barbara Campus Information Practices Coordinator, Cheadle Hall 4121. For the types and locations of student records maintained by the campus, and titles and addresses of the officials responsible for the records, please refer to Policy P-1710 in the UCSB Policies and Procedures Manual, available in all campus offices.

The following information is designated as "public information" and normally will be released by the campus without the consent of the student: name, home address, home telephone number, date/place of birth, major, dates of attendance, degree/honors awarded, most recent school attended, athletic information, height, weight, participation in officially recognized organizations. Students have the right to restrict the disclosure of this information; a form to restrict disclosure of any or all of this information may be completed at the time of registration in the Office of the Registrar. A student requesting such restrictions should be aware, however, of the implications of such a request. For example, if a request is made to withhold from disclosure a student's name and degrees and honors received, the campus cannot make public any honors received by the student, such as election to Phi Beta Kappa, and cannot include the student's name and degree earned in the campus commencement program without the written consent of the student. Similarly, if a request is made to withhold from disclosure a student's name and dates of attendance, a student's status as a student cannot be verified for potential employers without the written consent of the student. Further, if a student's last instruction to the campus was to withhold from disclosure the degree granted to that student and the date on which the degree was conferred, that information cannot be confirmed for a third party in connection with the appointment of the graduate to a new position or in connection with an honor that individual received.

Personal data is included on each quarter's official registration materials, allowing students to examine and update their personal information.

Campus Regulations Applying to Campus Activities, Organizations, and Students

"Campus Regulations Applying to Campus Activities, Organizations, and Students" is available, free of charge, in the Office of the Dean of Students, Cheadle Hall 1005. This document

includes regulations relating to student activities as well as to academic misconduct and it also specifies conditions for applying sanctions for unsatisfactory conduct.

Contested Grades

Any student who believes that a grade was assigned based upon criteria other than course performance may challenge that grade using Academic Senate Regulations A25 and A10.

Regulation A25

(A) In the Santa Barbara division the term grade assigned to an individual student may be challenged by that student on grounds that the grade was based on an evaluation of the student's work by criteria not directly reflective of course performance such as discrimination on political grounds, or for reasons of race, religion, sex, or ethnic origin.

(B) A student wishing to contest a grade on such grounds must present a preliminary written appeal to the executive committee of the school or college offering the course prior to the end of the term following the term in which the grade was assigned. Upon receipt of this preliminary appeal, the chair of the executive committee or his/her designated agent (such as the ombudsman) shall promptly seek a resolution of the issue by consulting the parties involved and the chair of the instructor's department. If these efforts are unavailing within 30 days, the student may present a final written appeal to the executive committee. Upon receipt of this final appeal, the executive committee in consultation with both parties shall determine whether the evidence is sufficient to establish a *prima facie* case. If the dean or any other member of the executive committee was the instructor involved, that person shall not participate in these deliberations nor in those specified in (E).

(C) If the executive committee determines that a *prima facie* case exists, it shall request an investigation by the dean or the equivalent officer of the school or college concerned. However, if the dean was the instructor of the course in question, the vice chancellor shall be requested to undertake the responsibilities of the dean as stated below.

(D) In the investigation the dean shall provide a fair proceeding for both instructor and student, including information as to the character and object of the proceeding, knowledge of the allegations and evidence produced by the student to establish the *prima facie* case, and an opportunity for both parties to answer. The dean shall prepare a report of the investigation, making findings of fact and reaching conclusions as to whether the grade was based on unacceptable criteria as defined in (A), and if so, the nature of such criteria, and the dean shall recommend the change to be made in accordance with the provisions stated below. Copies of the dean's report shall be sent to the instructor and the student, both of whom shall have the opportunity to submit written comments to the executive committee before the committee's final decision.

(E) If the executive committee decides that the grade assigned reflects unacceptable criteria as specified in (A) it shall authorize one of the actions stated below.

The committee may act only as follows:

- 1) authorize retroactive withdrawal from the course;
- 2) authorize the change of a contested grade;
- 3) for courses offered in the College of Creative Studies, the executive committee shall determine the number of units to be assigned.

In each case before making its decision the committee shall again consult the parties concerned. The committee shall report its decision to the registrar for recording.

Salary and Employment Information, University of California

Field of Study	AVERAGE MONTHLY SALARY ¹			Percentage of Bachelor's with Full-time Employment ²
	Bachelor's	Master's	Doctorate	
Engineering	\$2,384	\$2,845	\$3,743	68.6%
Humanities	\$1,402	\$1,550	—	51.5%
Life Science	\$1,402	—	—	48.6%
Management	\$1,714	\$2,383	—	—
Physical Science	\$1,699	\$2,833	\$3,432	58.7%
Social Science	\$1,528	\$1,672	—	63.8%

¹SOURCE: A national survey of a representative group of colleges conducted by the College Placement Council, representing the average range of offers for December 1986 throughout the country. It should be noted that a wide variation in starting salaries exists within each discipline, based on job location, type of employer, personal qualifications of the individual, and employment conditions at the time of job entry.

²SOURCE: *The Job Market for UCLA's 1985 Graduates*. Percentages are based only upon those students with bachelor's degrees who began working full-time immediately after graduation.

Regulation A10

(A) (SR 542) No student may enter upon any organized instructional activity until he or she has registered and his or her enrollment has been approved by the appropriate study-list authority. No student may begin or continue a course if the officer of instruction in charge considers him or her unqualified by lack of preparation. Late registration may not be used to justify inadequate performance in a course.

(B) In the Santa Barbara division an instructor's refusal to permit a student to begin or continue a course may be challenged by the student on grounds that such refusal arises from discrimination on political grounds, or for reasons of race, religion, sex, ethnic origin, or for other arbitrary or personal reasons. The procedure for the initiation of such a challenge is set forth in regulation A25. However, the only final recommendations and decisions to be made by the officers and the committees therein specified shall be to deny or authorize the student's entry into, or continuation in the course concerned.

Student Grievance Procedure

UCSB is in compliance with all legislation which seeks to eliminate discrimination toward students. Titles VI and VII of the Civil Rights Act of 1964 prohibit discrimination on the basis of race, color, national origin, and religion. Title IX of the Educational Amendments of 1972 prohibits discrimination on the basis of sex. Section 504 of the Rehabilitation Act of 1973 prohibits discrimination on the basis of handicap. Policy action by the Regents of the University of California prohibits discrimination on the basis of age and sexual orientation.

Members of the UCSB campus staff are available to answer students' questions about nondiscrimination policies and procedures. Information and copies of the grievance procedure are available from these campus offices:

Assistant Vice Chancellor — Student and Community Affairs
Ernest E. Zomalt
Cheadle Hall 5203-B
(805) 961-2201

Assistant Vice Chancellor — Student and Community Affairs
Campus Title IX Coordinator
University Grievance Officer for Sexual Harassment
Harleen W. McAda
Cheadle Hall 5203-C
(805) 961-2771

Office of the Dean of Students
Leslie Griffin Lawson, Dean
Cheadle Hall 1005
(805) 961-4569

Women's Center
Janet Vandevender, Director
Building 434, Room 141
(805) 961-3778

Formal Student Grievance Procedure

WHO	WHAT	WHERE	WHEN*
Student	Files formal complaint	Office of the Vice Chancellor — Student and Community Affairs	Within 30 days of grievable action
Vice Chancellor— Student and Community Affairs	Forwards complaint	1) To designated investigator(s) 2) To head of department where alleged violation occurred 3) Affirmative Action Coordinator 4) Title IX Compliance Officer, if sex-related	Within 5 days of receipt of complaint
Department head	Files written answer to charges	With designated investigator(s)	Within 10 days
Investigator(s)	Examines circumstances of charge and reports findings	1) To Vice Chancellor—Student and Community Affairs 2) Department. 3) Student 4) Copies to Affirmative Action Coordinator and/or Title IX Officer	Within 10 days of receipt of department head reply or 20 days after receipt of complaint
Student	Presents written request for formal hearing	To Vice Chancellor—Student and Community Affairs	Within 10 days of receipt of investigator(s') report
Vice Chancellor — Student and Community Affairs	Arranges for impartial hearing; student chooses hearing entity	Campus location	Within 30 days
Vice Chancellor — Student and Community Affairs	Notifies grievant and department head of hearing time and place	Personally or by registered mail	15 days before hearing date
Each party	Exchanges evidence	To be agreed upon	Within 7 days before hearing
Hearing entity	Reports findings; makes recommendations	To Vice Chancellor—Student and Community Affairs	Within 30 days after hearing
Vice Chancellor— Student and Community Affairs	Makes decision based on report and recommendations	To both parties and their representatives; To Affirmative Action Coordinator and/or Title IX Officer	Within 15 days from receipt of report
Student	Files appeal	To Chancellor	Within 30 days from date of decision
Campus	Keeps all hearing records	As designated by the Chancellor and subject to privacy and disclosure legislation	For 3 years
* All time referred to shall be working days.			

Special Services Program
Diane E. Glenn, Director
South Hall 1417
(805) 961-2668 V / TDD

Ombudsman's Office
Geoffrey Wallace, Ombudsman
Amelia Frank, Ombudsman
Building 427, Room 201
(805) 961-3285

Affirmative Action Office
Raymond Huerta, Coordinator
Cheadle Hall 3203
(805) 961-2089

Associated Students Student Assistance Office
UCen Third Floor
Graduate Division
Paula Rudolph, Assistant Dean
Cheadle Hall 3117
(805) 961-2546

Educational Opportunity Program Offices
Yolanda Garcia, Director
Building 434, Room 125
(805) 961-3720

Any student who wishes to file a grievance arising from alleged discrimination (other than a contested grade) must do so at the Office of the Vice Chancellor — Student and Community Affairs, 805/961-3651, Cheadle Hall 5203.

The chart above summarizes the steps in the university's formal grievance procedure for discrimination.

One form of sex discrimination is sexual harassment. UCSB has a policy prohibiting sexual harassment and providing a grievance procedure specifically for this form of discrimination. Copies of the grievance procedure for sexual harassment may be obtained from each of the above mentioned offices. In addition, the Chancellor has appointed a University Grievance Officer for Sexual Harassment. The task of the University Grievance Officer is to refer complaints to the appropriate campus grievance procedures and to handle those complaints not covered by established procedures.

Further information and/or assistance can be obtained from the University Grievance Officer for Sexual Harassment, Harleen W. McAda, Assistant Vice Chancellor — Student and Community Affairs, 805/961-2771, Cheadle Hall 5203-C. Graduate students may contact Paula Rudolph, Assistant Dean, Graduate Division, 805/961-2546, Cheadle Hall 3117.



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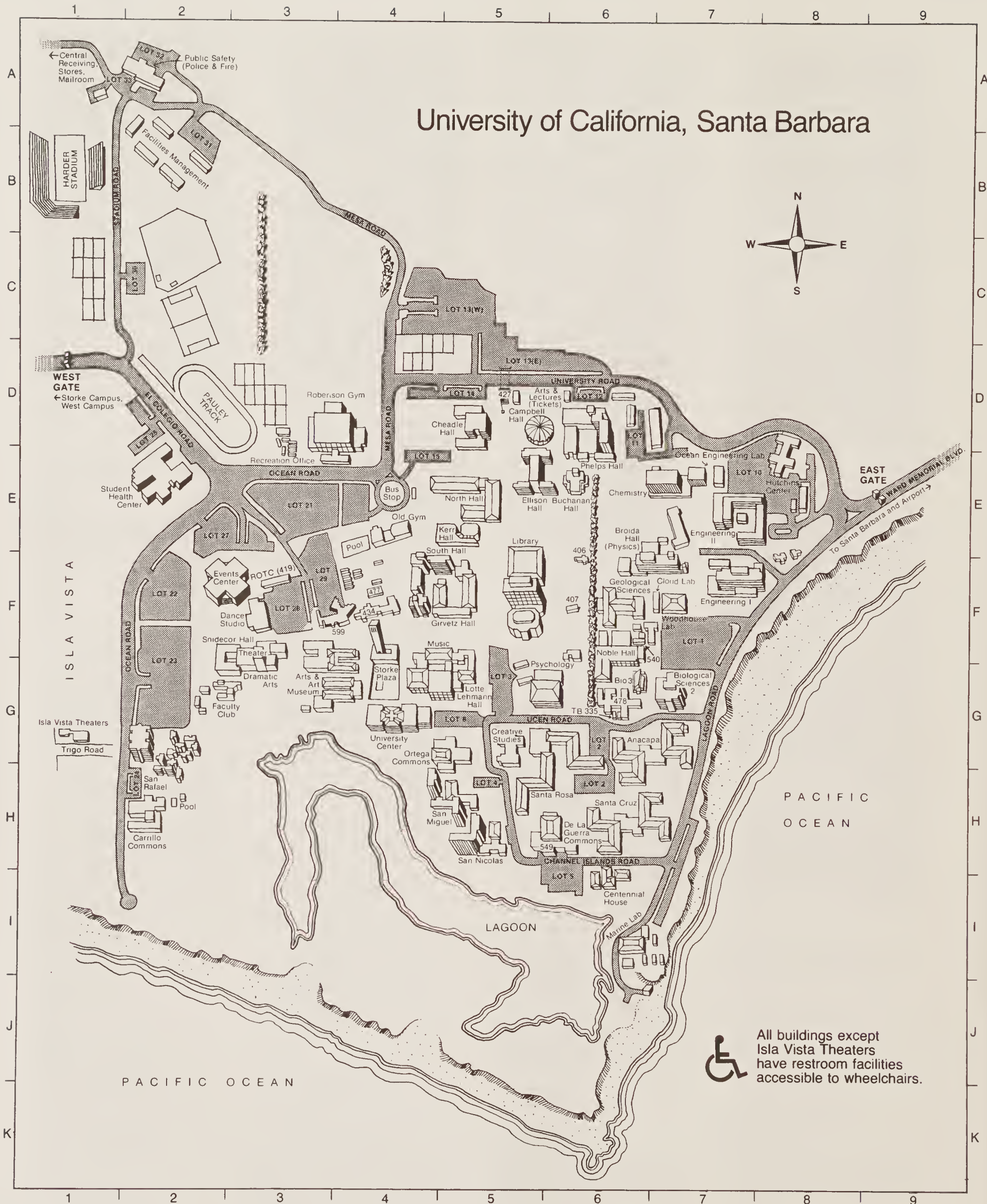
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Correspondence Directory

University of California, Santa Barbara, California 93106
For campus telephone information, dial (805) 961-2327 **V/TDD**. *

Office	Location	Phone (Area code 805)
Admissions (Undergraduate)	Cheadle Hall 1210	961-2881 V/TDD
Associated Students	University Center 3177	961-2566
Billing, Accounts Receivable, Collections	Cheadle Hall 1311	961-2155
Bookstore	University Center	961-3271
Counseling and Career Services	Building 599	961-4411 V/TDD
College of Creative Studies	Building 494	961-2364
College of Engineering	Engineering 1016	961-2809 V/TDD
College of Letters and Science	Cheadle Hall 2119	961-2038 V/TDD
Community Housing (Off-campus)	Building 434, Room 110	961-4371
Dean of Students	Cheadle Hall 1005	961-4569
Education Abroad Program	Girvetz Hall 1231	961-2958
Educational Opportunity Program/ Student Affirmative Action	Building 434, Room 125	961-3235
Affirmative Action	Cheadle Hall 3203	961-2701
Financial Aid	South Hall 1607	961-2432
Graduate Division	Cheadle Hall 3117	961-2277 V/TDD
Graduate School of Education		
Advanced degrees	Phelps Hall 1175A	961-2137
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Graduate Students Association	South Hall 1409	961-3824
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Instructional Development	Kerr Learning Resources Hall 2130	961-4335
International Students and Scholars	Building 434	961-2929
Library	Library Building	961-2478
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